File

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

DEC 01 1999

REPLY TO THE ATTENTION OF:
DW-8J

CERTIFIED MAIL P 140 676 815
RETURN RECEIPT REQUESTED

Mr. Christopher S. Bland
Environmental Engineer
Equistar Chemicals, LP
625 East U.S. Highway 36
Tuscola, Illinois 61953

RE: EPA Site Visit - October 21, 1999
Equistar Chemicals, LP
ILD 005 078 126

Dear Mr. Bland:

The U.S. Environmental Protection Agency (EPA) has reviewed the information gained through EPA and Illinois Environmental Protection Agency (IEPA) RCRA files and the site visit conducted on October 21, 1999. It has been determined that your facility is a good candidate for achieving U.S. EPA's Government Performances and Results Act (GPRA) environmental indicators (CA725 - Current Human Exposures Under Control and CA750 - Migration of Contaminated Groundwater Under Control). However, more information is required to make these determinations.

We are concerned with the groundwater contamination plume from the landfills and the WWTP lagoons area. We cannot make a positive determination on the Indicators due to insufficient information. Specifically, for the landfill plume, we need to know that the plume has stabilized (i.e., not migrating beyond the original zone of contamination). Also, there is essentially no data on the WWTP lagoons. At this time, we are unable to complete a determination because no data exists for the WWTP lagoons which would show if contamination exists in the surface water, sludges, or groundwater underlying the units.

In order to gather the necessary information to perform Environmental Indicator determination, we propose that Equistar enter into a voluntary agreement with the U.S. EPA by January 31, 2000. The agreement would require your facility to submit a report to the U.S. EPA by January 31, 2001 which would document how the environmental indicators could be achieved and propose a final remedy to the U.S. EPA no later than July 31, 2001. If it does not appear feasible to complete this work by these deadlines or Equistar does not wish to accept this proposal, your site will be referred to our Enforcement and Compliance Assurance Branch for a RCRA 3008(h) order.

120-12

I have enclosed copies of the environmental indicator documentation forms. Please review these forms as they will provide some idea of the information that is necessary with respect to the landfills and the WWTP lagoons to achieve a positive determination for the environmental indicators.

I have also enclosed a copy of my site visit memorandum per your request.

If you have any questions concerning this issue, please contact me at (312) 886-7890.

Sincerely,

Peter Ramanauskas
Environmental Engineer
Waste Management Branch
Corrective Action Section

Enclosures: Environmental Indicator Forms
Site Visit Memorandum

cc: Jeff Turner, IEPA
Hak Cho, U.S. EPA

MEMORANDUM

To: Hak Cho

From: Peter Ramanauskas

Date: October 22, 1999

Re: Equistar Chemicals (ILD 005 078 126) - GPRA Site Visit (10/21/99) - Tuscola, Illinois

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On October 21, 1999, I met with representatives from the Equistar Chemicals plant in Tuscola, Illinois in order to assess the current status of the Solid Waste Management Units (SWMUs) present on site. This was done to gather information on facilities in the Government Performance and Results Act (GPRA) baseline for which the U.S. EPA has little or no current information. Present at the meeting were Equistar representatives Christopher Bland, Environmental Engineer; Mark Betczynski, Sr. Environmental Specialist; Jerry Starkey, Environmental Manager; and Richard Purgason, Site Manager. Jeff Turner, site inspector, represented Illinois EPA. The morning meeting consisted of introductions, an explanation of U.S. EPA's interests, and a review of the status of the SWMUs identified in the 1988 RCRA Facility Assessment. The units were then visually observed.

Site Background

Equistar is a fully-regulated LQG of hazardous waste. Prior to January 7, 1987, Equistar operated 3 interim status RCRA Hazardous Waste Management units. Equistar decided it was more practical to close the TSD units than to get a Part B Permit; therefore, it closed the TSD units: Bldg 220 (container storage), Flare (treatment), and Snake River (surface water impoundment).

In 1988, an RFA was prepared by EPA staff. SWMUs identified included: wastewater treatment sludge lagoons, a surface water impoundment (Snake River), fly ash/acid pit landfills, and gypsum piles. In addition, the facility had accumulated wastes generated from alcohol production and polyethylene production (ceased in 1994) for less than 90 days in above ground storage tanks (Tanks 1254 A & B; Tanks 1256 A & B). These tanks were decommissioned in 1993.

Current Unit Status

1. Snake River (surface water impoundment): Clean Closed. Closure plan approved IEPA 10/15/93. Clean-closure was certified by IEPA on 9/2/1997. No Post-Closure plan required. GW monitoring program terminated. No known groundwater exceedances prior to termination. The area is covered with clean gravel.

2. Flare (treatment): IEPA Closed on 1/7/87.

3. Building 220 (container storage): IEPA Closed on 7/11/86.

4. Gypsum Landfills, Injectate Impoundment (area in between gypsum landfills), and fly ash/acid pit piles: All units addressed under IEPA closure permit (12/17/1993). Gypsum landfill closure completed in late 1994. The units were capped and a groundwater monitoring program established. Groundwater monitoring parameters include: general field parameters (pH, specific conductance, temperature, etc.), metals (arsenic, chromium, etc.), and VOCs (acetone, benzene, toluene, etc.). Groundwater exceedances, particularly for sulfates, have been noted during each monitoring event since closure. IEPA issued a violation notice in September 1997. Equistar applied for an assessment monitoring permit, which will be issued 10/99. IEPA will probably resolve the violations after issuance of the permit.

   The injectate impoundment was a 20 acre holding pond used for storage prior to nonhazardous UIC well injection. It was closed in conjunction with the gypsum landfills in late 1994. Since the pit was also underlain by gypsum, it is considered part of the gypsum piles (for groundwater monitoring purposes) for which a violation notice has been issued as noted above.

   The fly ash/acid pit piles were all closed with waste-in-place in 1993 pursuant to IEPA closure permit. Sulfate exceedances in groundwater are likely tied to the gypsum piles, but could be due in part to the fly ash.

   All units are capped and vegetated.

5. Tanks 1254 A & B and 1256 A & B (former alcohol slop tanks): Tanks were removed in 1993. The area was sampled in 1996 and BTEX and SVOCs were found. As of October 1996, Equistar indicated that "hot spots" would likely be excavated and remaining contamination would be addressed. Following excavation of hot spots, Equistar made a "TACO" demonstration, which was approved by IEPA in 1999, and the area is now considered closed. The area is covered with clean gravel.

6. WWTP area lagoons: This area consists of a series of unlined lagoons used for wastewater treatment and one for clean water for processing. All units are still in existence; none have groundwater monitoring in place. The facility discharges treated wastewater to the Kaskaskia river under an IEPA issued NPDES permit. The NPDES permit requires the river be monitored for pH, Total Dissolved Solids, Fluoride, BOD, etc.

   The facility's wastewater used to contain benzene. There is the potential for the presence of benzene in the wastewater lagoons sludge. Previous to the summer of 1991, when the ethylene unit (the primary contributor of benzene to their wastewater) was decommissioned, the wastewater tributary to the ponds may have been characteristically hazardous. No recent testing of lagoon sludges has been done. Testing of wastewater may

have been done as a requirement of the NPDES permit, but as the time limit on retaining of those records is 2 to 3 years, it is unsure if the records exist.

After the units were visually observed, an exit meeting was conducted at which I informed the facility that the U.S. EPA would review the information gained by this site visit and, upon internal discussion, decide upon a course of action. Regarding GPRA environmental indicator determinations, it may be possible to achieve a "Human Exposures Controlled" determination as most of the units are closed, capped, and access to the facility is restricted. For Groundwater indicators, it may be necessary to further delineate the landfill contaminant plume (this expanded groundwater monitoring program is being performed under the guidance of the IEPA).

Draft EI Report Notes

* Sludge had 4 VOCs, 6 SVOCs and 3 metals of concern.

* Intermittent stream sediment had 2 SVOCs & 2 Metals. Metals below ?R4? Screening levels. SVOCs & Metals above inhalation & ingestion screening levels. Likely attributed to facility.

* River Sediment had 3 SVOCs in the WWTP outlet channel and in the furthest downstream sediment sample.

* VOCs in GW - 4 detected in shallow MW03S. 2 in deep (chloroform, bromodichloromethane)
* SVOCs in GW - none in shallow or deep.
* Metals in GW shallow - 4 detected (boron, lead, iron, manganese). Deep (iron, manganese, sulfate).

* Talk to Allen about the "Exploding Samples" email & QA info in Appendix I.

* Not all surface water constituents listed in Table 19 (e.g. Pyrene). See also Appendix H-2 for data.

* Groundwater: Boron in deep aquifer, but does not exceed Class I GW. However it is found above that level in the landfill wells. Iron detected above screening levels in both RFI wells & landfill wells. Lead in 1 deep well (MW04D) above Class I and in landfill wells above Class II. Manganese above Class I in RFI wells. Sulfate is mainly in landfill wells, but 4 shallow RFI wells had it too.

* Copy well map and show hits of constituents,
↳ If they aim to control/compliance on sulfate will it capture other metals?

Landfill GW Monitoring Supplemental Permit Package Notes - who at IEPA got this?

* Landfill monitoring indicates detections of Ammonia (G103 - 22mg/L); Chromium (several wells & in leachate at 2000 ug/L - above Class II); Lead (G118 - above Class II). Cadmium & Selenium (detected in several wells).

* Shallow GW impacted by sulfate (G119 to G125). Horizontal extent not defined. (What about other metals?)

* Propose a new GW assessment to assess shallow GW further from landfills. Calculate a fate & transport model to determine placement of compliance monitoring wells to establish a GW Management Zone. Geoprobe sampling in fall for sulfate only to provide for field decisions on stepping out further. Use MODFLOW/MT3D to calculate location of compliance wells.

Tables:

Iron (exceeds Class II G103, G108, G112, G309); Sulfate (exceeds Class II at G105, G106, G108; G109, G110, G112, R113, G114, G115); Boron (exceeds Class II G112, R113, G118, G200, G201, G209, G300, G306, G309); Lead (exceeds Class II at G112)

Leachate wells high in Arsenic (320 ug/L); Boron (2200 ug/L); Cadmium (240 ug/L); Chromium (2000 ug/L); Iron (680,000 ug/L); Manganese (49000 ug/L); Sulfate (6500 ug/L); 1,1,1 -Trichloroethane (20ug/L); 1, 2, 4 - Trimethylbenzene (14 ug/L); 1,3,5 - Trimethylbenzene (2.9 ug/L); 1,4 - Dichlorobenzene (0.3 ug/L); 4-Isopropyltoluene (1.1 ug/L); Benzene (20 ug/L); cis-1,2-Dichloroethene (80 ug/L); Ethylbenzene (2.3 ug/L); Naphthalene (1.4 ug/L); Tetrachloroethene (0.94 ug/L); Toluene (7.3 ug/L); trans-1,2-Dichloroethene (0.86 ug/L); Trichloroethene (1.9 ug/L); Xylene (6.6 ug/L)

Any Leachate collection System? Probably

***** No VOCs in montioring wells, but there are some TOX hits (max 100 ug/L G109) *****

Peter Ramanauskas
08/07/01 01:22 PM

To: mnienkerk@claytongrp.com, rstjohn@claytongrp.com
cc: Allen Debus/R5/USEPA/US@EPA, Cho.Hak@EPAMAIL.EPA.GOV
Subject: Eco Info & QA/QC Data

Hello Gentlemen,

I'd like to address a couple of things in this email.

First off, I talked with Dan Mazur who mentioned that a good reference for eco risk is found at this link:

http://www.epa.gov/superfund/programs/risk/ecorisk/ecorisk.htm

This is Superfund guidance, but we use it as well. Steps 1 & 2 in the Superfund guidance speak about Screening level assessments. I've also attached a Region 5 document which describes the development of the Regional eco screening levels.

I hope this helps.

Secondly, we have looked at the laboratory data information you have provided. After reviewing the additional information you sent in reply to our questions, we have some concerns regarding the data quality. We are concerned that due to the various analytical difficulties contributing to off-spec QC data, the data may have limits for use in risk assessments.

As our priority is achieving the revised EI determination deadline of October, I'd like to know if the problems mainly occurred with the soil/sedment matrix data versus the groundwater data. It would be useful to prepare a summary writeup describing and documenting this. In looking through the information and looking at the Work Order Sample Summaries in Appendix I which identify the Lab Sample ID vs. the Client Sample ID, it seems to me that many of the problems were with the solid matrix. If this is the case and problems with the groundwater data are fairly minor, I believe we can still achieve the groundwater indicator. If the problems are restricted to sludge/sediment sampling we may be OK because the pathways may be eliminated for CA725 determination (e.g., there is no exposure to the sludges). Again, if you can present a writeup describing which samples were affected (sediment/surface water/sludge/groundwater data)and the degree of the problem, it will help in determining data usefulness for EI determinations.

Some of the other comments:

* Matrix interference due to presence of a substance which appeared dark in PNA/SVOC sample extracts. Unfortunately, this difficulty was not cleaned up properly in the case of PNA/SVOCs relying on good laboratory practices, with gel permeation chromatography. The interferent is referred to as a "hydrocarbon". Perhaps additional tests such as TPH might have divulged the nature of this unknown substance. Because the hydrocarbon evidently coeluted with internal standards, the concentrations would actually be lower than reported, even though it was necessary to dilute samples - a circumstance that causes reported detection levels and observed concentrations to be elevated. This raises the question of what the "unknown hydrocarbon" is and the possibility that it could be a major contaminant that we should look for.

* All samples intended for metals analyses (including soil samples) were digested as "wet" aliquots. In other words, Appendix Q in the R5 Model QAPP Policy was not followed.

* There is clarification that exploding samples were redigested as part of the corrective action. While the cause of this problem was not noted, at least there was corrective action applied to the matter such that the splattering problem would not have posed additional concerns for data quality. We would be curious to know whether the soil was alkaline in nature.

* While Internal Standard data isn't too bad, although out of range, much of the PAH (and one phenol result) percent recoveries were quite poor. This, however, is due to the dilution factors that were applied as a consequence of the "unknown hydrocarbon". Metals data is generally poor, and we would attrribute the poor soil QC results to inattention to Appendix Q

These problems result in many data sets of qualified data, or data that is biased low, and the possibility of an unknown hydrocarbon that itself could be a major contaminant.

At this point I would like to focus on examining the QA/QC problems in terms of severity by matrix in order to assess the data's use for meeting the Environmental Indicators as we have agreed on a new October deadline. If the problems with data quality for certain matrices are severe (e.g., for sediment samples) and the pathway cannot be eliminated as a concern, there may be a need for resampling/analysis.

I understand that you are collecting more GW/sediment samples this week. Please be sure to inform your lab of our concerns with previous performance. I imagine that a conference call or face-to-face meeting to discuss these matters would be helpful. Please let me know when you'd be available.

Thanks!
Peter

EDQL Development workdrf9

Allen Debus
09/13/01 11:14 AM

To: Peter Ramanauskas/R5/USEPA/US@EPA
cc:
Subject: Re: Millennium / Tuscola - QA/QC Data Reply

Peter:

My evaluation of the recent reply from Clayton is that it is more or less what I anticipated. Maybe this is wishful thinking, but it is possible that if a pre-QAPP meeting had been held at least some of these adverse circumstances might have been avoided.

I understand and accept their explanations, yet this is not to mean that the lab performance couldn't have been different - although I hesitate to say that it would have been therefore necessarily better given the matrix interference difficulties they have documented.

I can only really say that I do have an improved picture of the problems they experienced. But I do believe that their concept of what is a "sample" in the case of Appendix Q - metals analyses is different from mine. I would regard the sample as the entire contents of the jar and that ideally it should be as homogeneous (to increase it representativeness when collected properly) as possible. In cases where it is possible to homogenize without altering the sample such that subaliquots are "precise" then this should be an encouraged practice. While I may disagree with Clayton's concept however, there isn't much to be done & Clayton claims their precision was good enough (which mya be debatable).

You should freely use this data to the extent you can to satisfy any GPRA objectives. I will not claim to Mario, however, that this is high quality data for use in risk assessments, as much of it is non-valid & of questionable utility for reasons beyond the lab's control.

Allen

Peter Ramanauskas

Peter Ramanauskas
09/12/01 02:39 PM

To: Allen Debus/R5/USEPA/US@EPA
cc:
Subject: Millennium / Tuscola - QA/QC Data Reply

I haven't looked at the attachments yet, just passing it on your way for your $0.02.

Please let me know if it will cost me $0.05 or even $0.10.
P
----- Forwarded by Peter Ramanauskas/R5/USEPA/US on 09/12/01 02:38 PM -----

Monte Nienkerk <MNienkerk@claytongrp.com>
09/12/01 09:07 AM

To: Peter Ramanauskas/R5/USEPA/US@EPA
cc: RStjohn@claytongrp.com, tdimond@mayerbrown.com, jrice@mpc-usa.com
Subject: Millennium / Tuscola - QA/QC Data Reply

* Sludge/Sediment data ~~are~~ is not ~~be~~ useful for Risk Assessment?
Soil data is not affected.
* Sediment w/pH > 8? Resampling this sediment?
*

Monte Nienkerk
<MNienkerk@claytongrp.com>

09/12/01 09:07 AM

To: Peter Ramanauskas/R5/USEPA/US@EPA
cc: RStjohn@claytongrp.com, tdimond@mayerbrown.com, jrice@mpc-usa.com
Subject: Millennium / Tuscola - QA/QC Data Reply

Peter:

Our laboratory has completed its review of the questions / issues raised in your email dated August 7, 2001. Their reply is attached. I have summarized their reply below.

- Matrix interference issue.
25 samples were identified with elevated detection limits due to matrix interference.
21 of these samples were sludge samples collected from the wastewater treatment ponds.
4 samples were sediment samples (1 from the intermittent stream, 1 from the outlet channel, and 2 from the inlet channel).
This was not an issue with any of the water samples. — Good

3 Re sampling Sediments correct?

- Use of Appendix Q in the Region 5 model QAPP..
All solid samples submitted for metals analyses were digested in an "as received" state following EPA 3050 protocol. Depending on the non-homogeneity of the aliquot of sample taken, the MS/MSD may vary from the non-spiked sample. This can affect QC results. While Appendix Q may improve the QC results, it does not guarantee a better representation of the sample. A review of the QC data indicates that the sample matrix caused the MS/MSD recovery outliers; however, overall precision was good.

- Samples highly reactive during the extraction and digestion processes.
This was only associated with the sludge samples collected from the wastewater treatment ponds and the sediment samples with a pH greater than 8.0. 32 of the 53 sludge samples and 3 of the 11 sediment samples had a pH of 8.0 or greater.

↳ why are sediments so basic?

- MS/MSD samples that recovered outside acceptance criteria.
This occured with those sludge and sediment samples with high detection limits due to matrix interference. This masked the spike concentration in some of the MS/MSD samples.

I believe that this summary and the attached addresses the questions and issues raised in your August 7, 2001 email. Should you have any additional questions or would like to set up a teleconfernce to discuss further, please let me know.

Regards,

Monte M. Nienkerk, P.G.
Senior Project Manager
Clayton Group Services, Inc.
3140 Finley Road
Downers Grove, IL 60515

630-795-3207 voice
630-795-1130 fax

mnienkerk@claytongrp.com



epamillenresp2(010907). attachment1(010907). attachment2(010907).

Clayton
GROUP SERVICES

September 7, 2001

Monte M. Nienkerk
CLAYTON GROUP SERVICES
3140 Finley Road
Downers Groove, IL 50515

RE: EPA Questions

Dear Mr. Nienkerk:

This letter concerns the quality control issues outlined in the EPA's e-mail associated with the QC data for Millennium Petrochemicals, Inc. samples.

The EPA's first issue concerns the sample matrix interference, which elevated the PNA/SVOC reporting limits. The EPA suggests that GPC cleanup should have been used on the samples to eliminate the matrix interference due to unknown hydrocarbons in the soil. It has been Clayton's experience that the GPC cleanup procedure does not effectively eliminate midrange unknown hydrocarbons. Additionally, Clayton analyzed these samples using reasonable care applicable to all environmental laboratories following SW846 8720C. The standard laboratory procedure used when confronted with matrix interference due to unknown hydrocarbons is to dilute the sample, if necessary, and reanalyze the sample, to confirm the matrix interference. The samples affected by matrix interference are sludge and sediment samples. These samples are listed in Attachment 1. Clayton Group Services will review the corresponding PNA/SVOC chromatograms to identify, if possible, the compound(s) causing the matrix interference.

The EPA's second issue concerns the use of Appendix Q in the R5 Model QAPP for the analysis of the metals samples. All metals solid samples were digested in an "as received" state following EPA 3050 protocol to use a representative "wet aliquot." The procedure Clayton followed attempts to take the best representative aliquot of the entire sample. Depending on the non-homogeneity of the aliquot of sample taken, the MS/MSD may vary from the non-spiked sample. This can affect QC results. While Appendix Q may improve the QC results, it does not guarantee a better representation of the sample. A review of the QC data associated with the Millennium Petrochemical samples indicates that the sample matrix caused the MS/MSD recovery outliers; however, overall precision was good. The sludge/sediment samples chosen for the MS/MSD contained high concentrations of metals.

The EPA's third issue concerns the sludge/sediment samples that were highly reactive during the extraction and digestion processes. The EPA suggests that this reaction could be due to the samples being alkaline in nature. An alkaline sample is defined as a sample with a pH of 8.0 or greater. Approximately one half of the sludge/sediment samples analyzed had a pH greater than or equal to 8.0. Additionally, the samples contained high concentrations of calcium, potassium, magnesium, and sodium, which could indicate high concentrations of carbonate (a counter ion to these metals, which would react violently to acid.) Attachment 2 contains the associated pH and metals data.

The EPA's final issue concerns the MS/MSD samples that recovered outside acceptance criteria. After further review of the QC data associated with the Millennium Petrochemical samples, the MS/MSD recovery outliers were due to sample matrix. The PAH MS/MSD samples recovered outside acceptance criteria because a dilution was necessary due to the high concentration of unknown hydrocarbons. The sludge/sediment samples chosen for the metals MS/MSD contained high concentrations of metals that masked the spike concentration in the MS/MSD.

→ Unknown HCs - might it be of concern?

I hope that all questions have been answered to your satisfaction. If you require additional information or clarification, please contact me at 248.344.2670 or jrusin@claytongrp.com.

Sincerely,

Jane Rusin
Client Service Representative
Detroit Regional Laboratory

YE

CORRECTIVE ACTION STABILIZATION QUESTIONNAIRE

RELEASED 11/27/00
DATE
RIN #
INITIALS

ENFORCEMENT CONFIDENTIAL

RECEIVED
OCT 13 95

Completed by: Mary Wojciechowski
Date: September 15, 1992

Background Facility Information

Facility Name: Quantum Chemical USI Division
EPA Identification No.: ILD 005 078 126
Location (City, State): Tuscola, IL
Facility Priority Rank: High

1. Is this checklist being completed for one solid waste management unit (SWMU), several SWMUs, or the entire facility? Explain.

Eight SWMUs of concern identified during a 1988 RFA

Status of Corrective Action Activities at the Facility

2. What is the current status of HSWA corrective action activities at the facility?

( ) No corrective action activities initiated (Go to 5)
(X) RCRA Facility Assessment (RFA) or equivalent completed
( ) RCRA Facility Investigation (RFI) underway
( ) RFI completed
( ) Corrective Measures Study (CMS) completed
( ) Corrective Measures Implementation (CMI) begun or completed
( ) Interim Measures begun or completed

3. If corrective action activities have been initiated, are they being carried out under a permit or an enforcement order?

( ) Operating permit
( ) Post-closure permit
( ) Enforcement order
(X) Other (Explain)

Past corrective actions took place as part of RCRA closure.

4. Have interim measures, if required or completed [see Question 2], been successful in preventing the further spread of contamination at the facility?

( ) Yes
(X) No
( ) Uncertain; still underway
( ) Not required

Additional explanatory notes:

The 1988 RFA revealed that contamination was still present at the facility.

Facility Releases and Exposure Concerns

5. To what media have contaminant releases from the facility occurred or been suspected of occurring?

   (X) Ground water
   (X) Surface water
   (X) Air
   (X) Soils

6. Are contaminant releases migrating off-site?

   (X) Yes; Indicate media, contaminant concentrations, and level of certainty.

Groundwater:
Surface water: Metals found in surface water runoff
Air:
Soils:

   ( ) No
   ( ) Uncertain

7a. Are humans currently being exposed to contaminants released from the facility?

   ( ) Yes (Go to 8a)
   ( ) No
   (X) Uncertain

   Additional explanatory notes:

The RFA did not indicate where the surface water runoff flowed to or if humans could come into contact with it.

7b. Is there a potential for human exposure to the contaminants released from the facility over the next 5 to 10 years?

   (X) Yes
   ( ) No
   ( ) Uncertain

   Additional explanatory notes:

There have been many releases to soil at the facility. Ground water is used as a source of drinking water. The Kaskaskia river is within 1 mile of the facility.

8a. Are environmental receptors currently being exposed to contaminants released from the facility?

   ( ) Yes (Go to 9)
   ( ) No
   (X) Uncertain

   Additional explanatory notes:

The RFA did not indicate where the surface water runoff flowed to the Kaskaskia river is within 1 mile of the facility.

8b. Is there a potential that environmental receptors could be exposed to the contaminants released from the facility over the next 5 to 10 years?

   (X) Yes
   ( ) No
   ( ) Uncertain

   Additional explanatory notes:

There have been many releases to soil at the facility. Ground water is used as a source of drinking water. The Kaskaskia river is within 1 mile of the facility.

Anticipated Final Corrective Measures

9. If already identified or planned, would final corrective measures be able to be implemented in time to adequately address any existing or short-term threat to human health and the environment?

   ( ) Yes
   ( ) No
   ( ) Uncertain

   Additional explanatory notes:

Final corrective measures have not been identified or planned.

10. Could a stabilization initiative at this facility reduce the present or near-term (e.g., less than two years) risks to human health and the environment?

    (X) Yes
    ( ) No
    ( ) Uncertain

    Additional explanatory notes:

Implementing a means to contain surface water runoff which has flowed off site would partially reduce the risk to human health and the environment.

11. If a stabilization activity were not begun, would the threat to human health and the environment significantly increase before final corrective measures could be implemented?

    ( ) Yes
    ( ) No
    (X) Uncertain

    Additional explanatory notes:

There have been many releases to soil at the facility. Ground water is used as a source of drinking water.

Technical Ability to Implement Stabilization Activities

12. In what phase does the contaminant exist under ambient site conditions? Check all that apply.

    (X) Solid
    (X) Light non-aqueous phase liquids (LNAPLs)
    ( ) Dense non-aqueous phase liquids (DNAPLs)
    (X) Dissolved in ground water or surface water
    ( ) Gaseous
    ( ) Other _____

13. Which of the following major chemical groupings are of concern at the facility?

    (X) Volatile organic compounds (VOCs) and/or semi-volatiles
    (X) Polynuclear aromatics (PAHs)
    ( ) Pesticides
    ( ) Polychlorinated biphenyls (PCBs) and/or dioxins
    (X) Other organics
    (X) Inorganics and metals
    ( ) Explosives
    ( ) Other _____

14. Are appropriate stabilization technologies available to prevent the further spread of contamination, based on contaminant characteristics and the facility's environmental setting? [See Attachment A for a listing of potential stabilization technologies.]

(X) Yes; Indicate possible course of action.

Installation of lined surface water runoff retention pond would partially prevent the spread of contamination. Further investigation is needed to address the spread of contaminants via soil, ground water and air.

( ) No; Indicate why stabilization technologies are not appropriate; then go to Question 18.

15. Has the RFI, or another environmental investigation, provided the site characterization and waste release data needed to design and implement a stabilization activity?

(X) Yes
( ) No

If No, can these data be obtained faster than the data needed to implement the final corrective measures?

( ) Yes
( ) No

Timing and Other Procedural Issues Associated with Stabilization

16. Can stabilization activities be implemented more quickly than the final corrective measures?

(X) Yes
( ) No
( ) Uncertain

Additional explanatory notes:

17. Can stabilization activities be incorporated into the final corrective measures at some point in the future?

(X) Yes
( ) No
( ) Uncertain

Additional explanatory notes:

Conclusion

18. Is this facility an appropriate candidate for stabilization activities?

(X) Yes
( ) No, not feasible
( ) No, not required
(X) Further investigation necessary

Explain final decision, using additional sheets if necessary.

The following information was obtained from a RFA final summary and recommendations report dated October 1988. The author of this report was not identified.

This facility has had numerous releases to soil, ground water, surface water and air. Off site releases of metals via surface water runoff was confirmed. To prevent future releases of this nature a lined runoff collection pond should be installed at the facilty. Further stabilization maybe needed but additional investigation on the source, nature and extent of releases to soil, ground water and air must first be conducted.

Quantum Chemical, USI Division
RCRA Facility Assessment
Final Summary and Recommendations
October 1988 -KM

INTRODUCTION

A RCRA Facility Assessment (RFA) was completed for Quantum Chemical, USI Division (hereafter USI) in Tuscola, Illinois. The main objective of the RFA is to determine whether there is sufficient evidence of, or the potential for, a release of hazardous waste or hazardous constituents to the environment. Sufficient evidence of a release would require the owner/operator to undertake additional investigations to characterize the nature, extent, and rate of migration of the contaminant releases of concern.

The RFA for USI included: (1) a Preliminary Review (PR) of all available files, and (2) a Visual Site Inspection (VSI) on March 22, 1988, including a verbal review of the "Certification Regarding Potential Releases from Solid Waste Management Units", and (3) a Sampling Visit (SV) on May 17 and 18, 1988.

The Preliminary Review and Visual Site Inspection revealed that the USI facility has several SWMUs which needed further investigation, including a sampling visit.

For the SV a total of 13 samples were collected, by Metcalf and Eddy, Inc. (M&E) personnel, from several areas around the facility, as specified in the U.S. EPA sampling plan for USI. Exact sample locations, sample depths, traffic reports, and other information pertinent to the sampling visit, are included in the sampling visit report prepared by M&E.

Based on the sampling results, several areas are identified as having significant contamination, suggesting that a release of hazardous constituents to the environment has occurred. Varying concentrations of several Appendix VIII constituents were detected in the samples collected from these units (see below).

The following is a summary of the main activities of the facility and a brief description of the solid waste management units of concern.

FACILITY DESCRIPTION

General

U.S. Industrial Chemicals Company (USI) is a hydrocarbon processing plant located in Tuscola, Illinois. USI is a division of Quantum Chemical. The facility is located 3 miles west of US 45 on US 36, about 3 miles west of the town of Tuscola, Illinois. USI has operated at this site since 1953. The facility occupies 776 acres, including farmland. The surrounding area is dominantly agricultural with some residential areas. The Preliminary Assessment for the site estimated that 380 persons would be affected by a release to the ground water. The Kaskaskia River is less than one mile from the site. The Cabot Corporation shares a common west boarder at the southern portion of the USI facility.

Liquid petroleum gas: propane, butanes, and pentane are the facilities main products. Ethylene, ethyl alcohol, ethers, and polyethylene are also produced. Sulfuric and phosphoric acid was produced prior to 1971. Sulfuric acid was produced again after 1971 but discontinued by the mid 1970s. USI representatives say they have no plans to again produce sulfuric acid. The sulfuric acid production equipment is still present.

In their original Part A, listed wastes included: F001, U210, D002, D001, D007, P120, and U013. Wastes U013, U210, P120 and D007 were later deleted. Of those wastes remaining on the Part A, a D002 surface impoundment, a D001 thermal treatment unit, and a F001 drum storage area have gone through approved closure. Subsequently, USI is no longer seeking a RCRA permit, although they are a generator.

Several laboratory and production wastes, mostly organics (ethers, alcohol, benzene), are sent to the WWTP.

Hydrology and Geology

A ground water study on this facility was completed by a consultant for the facility (see below). Most of the technical reports and sampling information are on file with the IEPA. A visit to the IEPA was conducted to review these files. The regional ground water is reported to be of poor quality with no well defined aquifer (see report prepared by Bruce Yare, in USI RFA accordion folder). The aquifer is described as sand lenses within the glacial till clays. The water table is within a few feet of the surface (verified during the Sampling Visit). USI is located on a recharge area with the Kaskaskia River the discharge area. The site is relatively flat with a slope of <3% to the W/SW. The ground water flow is generally east-west. A ground water divide exists under the facility; ground water west of the divide flows to the Kaskaskia river with the ground water east flowing to the Embarrass River.

The site is underlain by approximately 100' of glacial till. The vertical permeability of the clay was determined to be in the 10-8 to 10-9 range, however, the horizontal component is in the 10-5 range. The ground water monitoring system designed for the facility is not adequate to monitor all the SWMUs on site. A total of ten wells exists on site, four for snake river and six others throughout the facility.

Hazardous Waste Management Units

USI had operated the following hazardous waste management units under interim status:

*Drum Storage (F001 -storage)
*Surface Impoundment (snake river - D002, treatment)
*Thermal Treatment (D001, treatment)

As previously mentioned, all of these unit have been closed and USI is not seeking a RCRA permit (USI does have generator status). The IEPA oversaw the closure of these units. Documents are on file with the IEPA.

SOLID WASTE MANAGEMENT UNITS OF CONCERN

USI has several areas with SWMUs of concern. In general these areas include, but are not limited to, WWTP sludge lagoons, Snake River Surface Impoundment, Fly Ash disposal/acid pit landfill areas, and Gypsum Piles and associated leachate collection ditches (see Preliminary Review, VSI, and SV reports for details of these areas). The fly ash/disposal areas could not be sampled directly due to the extremely large amounts of overburden (fly ash). Therefore, the surrounding areas and drainage areas were sampled. Sampling results have shown that several of these areas are contaminated with metals and/or organics (see attachment 1). Below is a unit by unit review of the sampling results.

1) West Gypsum Pile

A water sample was collected from Monitoring well G106 (sample S01), at the NW corner of the Gypsum Pile. This well was chosen for its proximity to the disposal areas: gypsum piles and north fly ash area. Since the ground water report by Yare suggested that no real aquifer existed and that the clay had a low permeability, a well close to the disposal area was chosen. A concern going into the sampling event was that the well would be purged dry, as suggested by Yare's report, and that it would be difficult to collect the amount necessary for sampling. To alleviate this potential problem USI agreed, suggested by the author, to purge this well prior to our visit. As it turned out there was a drawdown during sampling, but the water level stabilized an appreciable distance from the bottom of the well, and the samples, as well as a field blank, were easily collected. One minor problem with the sample collection was that the dedicated pumping system acted to agitate the water as it is removed. Volatiles could have been driven off. However, prior to collecting the sample an Hnu reading was taken and no reading above background was detected. Therefore, I was not concerned with this method of collection. While the lab analyzes did not reveal any contamination (except that the water contain high quantities of dissolved metals - hard water) the amount of water extracted raises concern over the permeability of the tills and, therefore, the transport of contaminants away from the disposal areas. The formation does not appear as tight as suggested by Yare.

A past sampling event, results on file with the IEPA, revealed that well OW-6 (G106) had 10mg/l TOC. No explanation for this test result was given in the report nor was it pursued.

Recommendation - I am somewhat skeptical of the characterization of the site's geology and hydrogeology for reason discussed above. Also, the prior detection of TOC in this well is reason for concern which needs to be explained.

2) East Gypsum Pile and associated leachate collection ditches

A total of 3 samples were collected from this area (see sampling visit report). Waste surfactant and the gypsum pile leachate is pumped to the top of the pile. Ion exchange waste waters are also pumped to the leachate collection ditches. None of these wastes are reportedly hazardous or have hazardous constituents. The Ion exchange waste waters can exhibit pH extremes. When collecting the samples from the top of the south gypsum pile in the white surfactant material, an odor was noticed but the Hnu did not detect anything over background. A color banding

(alternating dark and light) was noticed in the "sludge" when the sample was collected (see sampling visit report). This could have been the result of a mixture of the white surfactant and the large amounts of fly ash and coal at the facility. Sample S05 detected low level volatile organics (Attachment 1).

Recommendation - A waste stream analysis should be done of the effluent pumped from the facility to the top of the gypsum piles and collection ditches. Based on this, a risk assessment of the contaminants should be done and a more detailed sampling of the gypsum pile might also be in order. The odor and banding of the "sludge" suggests that more than surfactant is disposed atop the gypsum piles. If the dark banding in the "sludge" is due to wind blown fly ash or coal, methods should be taken to reduce the amount of air blown particulates.

3) North Fly Ash/ Acid Pit Disposal Area

This area and the south Fly Ash area (see below) were the areas of highest concern going into the sampling visit due to the acknowledged disposal of solvents and unknowns in this area (Attachment 2). However, the only logical way to sample these areas was to concentrate on the bordering and drainage areas (see sampling plan, samples S09 and S10) due to the large amount of overburden. Laboratory analysis shows that both locations have considerable metal contamination, particularly arsenic (Attachment 1). The main concerns here are that these metals will enter the site drainage which eventually exits to the Kaskaskia River via an NPDES permit, or that they are E.P. Tox and are leaching to the environment.

Recommendation - Notify the NPDES program of the potential of high metal concentration from this site. Run E.P. Tox for these samples to see if metals are leaching to the subsurface. Also, analyze the Fly Ash to confirm the source of the metals. If the fly ash samples metal concentrations do not correspond to the RFA sample results, the metals would be coming from another, potential hazardous/unidentified source.

Comparison of the sampling results with published fly ash characterization suggests abnormally high metal concentrations (Attachment 4). Remember that the drainage area was sampled and not the fly ash directly.

Concerns - This area was used as a landfill at one time for potentially hazardous materials. The lack of detection of hazardous organics in the RFA sampling should not indicate that no potential for harm exists. However, the sheer volume of material piled atop the landfill areas makes direct sampling difficult and potentially hazardous. The only effective way to monitor for releases form these areas would be to install ground water monitoring wells or possibly a soil gas survey. Furthermore, the reservation I have about the characterization of the site's geology and hydrogeology raises further environmental concerns. The potential exists that hazardous constituents could migrate further and quicker than I previously thought possible.

4)South Fly Ash/Acid Pit Landfill Disposal Area.

There are actually two fly ash/acid pit areas in this south area. The original thought was to collect a deep sample between the two areas, at the water table, to check for releases. The reason a central location was decided upon was the fact that a ground water divide exists below the facility right near this area.

The central location will allow detection from one of these areas regardless of the direction of ground water flow. At the start of the sample boring an odor was noticed and a low, but detectable Hnu reading was recorded. The decision was made to take a more shallow sample at this odor horizon. This odor appeared to originate from the interface between "deltaic" outwash from the fly ash area and the natural in situ materials. It is possible that this horizon/interface could be a contaminant transport horizon. However, upon receipt of the lab analyses only metals were detected.

Recommendation - Again as with the North fly ash area, E. P. Tox should be run on these samples as with the fly ash to determine the source of the contamination.

Concerns - Same as #3, above.

5) WWTP Lagoons

Several Metals, most noticeably Arsenic and Chromium, were detected in the sample collected in this area (Attachment 1). The source of the metals is unknown. Since the sample was collected in the sludge the metals cannot be native. I have not found evidence that any of the production waste streams would contain metal of these concentrations. A probable source of the arsenic would be from the fly ash. Copious amounts of fly ash are generated from the large amounts of coal used at the site. A possible scenario to account for the Chromium might be related to the Snake River Surface impoundment. Originally the impoundment was listed for the reduction of chromates, from cooling tower blowdown. The listing was, however, deleted after USI showed that Chromium reduction did not occur in the impoundment (see attachment 3). Could it be possible that the chromium was still generated but was "flushed" through the impoundment and eventually became part of the WWT sludge? USI representatives said the sludge was sampled years ago at the suggestion of the USEPA. I could not find any record of this sampling in the files. It could be very useful to see the sample result and see what constituents were analyzed for.

Recommendation - See if the old sampling results can be found, if not, 1) analyze the waste stream, and 2) run E.P. Tox on the sludge, and 3) further sampling may be in order due to the large area and volume of sludge at the site.

6) Snake River Surface Impoundment

This impoundment was closed under IEPA authority. However, the RFA sampling detected high levels of metals and organics in this impoundment (Attachment 1). Several PAHs were detected in the impoundment. It is probable that the PAHs are a result of the coal burning facilities at the site. Based on the sampling analyses this impoundment warrants another look.

Recommendation - Review the Closure plan for this impoundment. Do a waste stream analysis to see where the constituents are coming from. If the PAHs are resultant of airborne releases from the coal plant, the Air Program should be notified. Several of the PAHs are carcinogens.

7)Off Site Drainage

All the drainage for USI is routed to the WWTP except for the small area in the south west portion of the facility which runs off site. Metals, including Mercury, were detected in the sediment sample collected at this location (Attachment 1). The source of this contamination is unknown. Mercury is generated in the laboratory and at one time was deep well injected.

Recommendation - Analyze the drainage to verify what the source of the mercury is.

8) Pit 11

This pit acts as a temporary holding pond as part of the WWT system. Some treatment has occurred before the sewage gets to this pond. There is also a pipe entering the pond originating from a fly ash area. Nothing was detected in the sampling.

Recommendation - Review the NPDES permit and confirm that this pond is not actually a waste impoundment, but part of the permitted WWT system.

MISCELLANEOUS CONCERNS

Several IEPA inspection reports noted extremely low pH in the gypsum ponds and associated leachate collection ditches. As part of the sampling, the sampling team checked the pH on every liquid sample. The pHs ranged from 5 to 9.5. These results were bases on Litmus Paper tests. If a pH extreme was observed, a Ph meter would have been used to achieve a more quantitative value. Based on these results, pH no longer appears to be a problem.

Something that should be considered is that with the past low pH liquids associated with the gypsum piles, and their proximity to the fly ash area, it is possible that metals from the fly ash, or other sources, would have been more easily mobilized and transported in this acidic environment.

FINAL SUMMARY AND RECOMMENDATIONS

There are several environmental concerns at the USI facility(see 1-8 above and Misc concerns). Of particular concern is the amount of arsenic in the site drainage. This is a release of significant concern. The amount and variety of constituents in the snake river surface impoundment are also of environmental concern. Several areas need to have metals tested for E.P. Tox; especially the fly ash areas and the sludge ponds. The NPDES permit and waste stream analyses need to be reviewed.

Several of the concerns mentioned above may be easily resolved through limited sampling and facility cooperation. The facility is, however, not seeking a permit so corrective action cannot be pursued in this manner. A copy of this report will be sent to the RCRA enforcement section for their review and evaluation. An alternative would be to call in a post-closure permit on the previously closed RCRA units and pursue corrective action in this manner.

ATTACHMENT 1

SUMMARY OF SAMPLING RESULTS AT USI

MEIB.3

S15 (Field blank) ppb
All undetected except for: Barium (1.6), Potassium (1540), Sodium (340).

S01 (MW 3106) ppb

All undetected except for: Barium (36), Calcium 331000, Iron 8140, Magnesium 156000, Manganese 1510, Potassium 5040, Silver (3.4), Sodium 214000, Zinc (17).

S03 (Drainage Ditch) ppm

All undetected except for: Aluminum 10400, Antimony (9.4), Arsenic 3.3, Barium 384, Cadmium 4.5, Calcium 15800, Chromium 344, Cobalt (7.7), Copper 27, Iron 18700, Lead 30, Magnesium 7070, Manganese 1130, Mercury 1.6, Nickel (41), Potassium (1410) Sodium (938) Vanadium 25, Zinc 373.

S04 (WWTP Sludge) ppm

All undetected except for: Aluminum 13500, Antimony (83), Arsenic 69, Barium 608, Beryllium (1.8), Cadmium 7.5, Calcium 130000, Chromium 1300, Cobalt (8.9), Copper 136, Iron 19500, Lead 52, Magnesium 7160, Manganese 529*, Nickel 32, Potassium (1640), Sodium (20200), Vanadium (19), Zinc 693.

Comments: The level of Chromium is of special concern.

S09 (Fly ash/ Pit - N) ppm

All undetected except for: Aluminum 13900, Arsenic 261, Barium 320, Beryllium 3.8, Cadmium 6.3, Calcium 44380, Chromium 38, Cobalt (9.8), Copper 35, Iron 19800, Lead 206, Magnesium (13500), Manganese 109, Nickel 38, Potassium 2490, Sodium 1700, Vanadium 64, Zinc 209.

Comments: The level of Arsenic is of special concern.

S10 (Fly ash/ Pit - Deep N) ppm

All undetected except for: Aluminum 10000, Arsenic 4.2, Barium

206, Cadmium 4.4, Calcium 33500, Chromium 16, Cobalt [0.61, Copper 13, Iron 18700, Lead 14, Magnesium 83800, Manganese 438, Nickel 20, Potassium 1550, Sodium [6911, Vanadium 15, Zinc 105.

S11 (Fly ash/ Pit - D) ppm

All undetected except for: Aluminum 11900, Antimony 36, Arsenic 231, Barium 174, Cadmium 30, Calcium 11300, Chromium 123, Cobalt [4.61, Copper 83, Iron 171000, Lead 38, Magnesium 1400, Manganese 65%, Mercury 0.45, Potassium 2100, Sodium 7520, Thallium 3.0, Vanadium 151, Zinc 119.

Comments: The levels of Cadmium and Arsenic are of special concern. High total metals.

S12 (Snake River) ppb
All undetected except for: Aluminum 10900, Antimony [053, Arsenic 35, Barium 450, Cadmium 10, Calcium 1060000, Chromium 337, Cobalt (30), Copper 87, Iron 45600, Lead 79, Magnesium 342000, Manganese 5150, Nickel 76, Potassium 2100, Silver [3.91, Sodium 180000, Zinc 820.

Comments: High metal levels for a water samples. Several values would exceed drinking water standards.

S13 (Background) ppm

All undetected except for: Aluminum 14800, Antimony [9.1], Arsenic 8.9, Barium 258, Beryllium [0.21, Cadmium 4.3, Calcium 3170, Chromium 15, Copper 18. Iron 20700, Lead 25, Magnesium 2700, Manganese 651*, Nickel 12, Potassium 1190, Sodium [4623, Vanadium 35, Zinc 102.

SUMMARY OF METAL RESULTS

The metals data above was compared against the site background values, published typical soil metals content, and level published in the RFI training manual for evaluation of metal contamination at the site. More emphasis was placed on the metal listed in the E.P. Tox and ground water drinking standards lists. Below is a summary of those sampling locations which have metals contamination, including the metals and the level of contamination.

S03 - Drainage ditch running off site

Chromium 344ppm
Mercury 1.6ppm

S04 - WWTP Sludge Pond

Arsenic 59ppm
Barium 608ppm
Chromium 1900ppm

S09 - Fly Ash/ Pit - N (South Side Drainage Ditch)

Arsenic 651ppm
Beryllium 3.8ppm
Lead 802ppm

S10 - Fly Ash /Pit - N (Deep Sample, West Side)

S11 - Fly Ash/Pit - Central

Antimony 35ppm
Arsenic 231ppm
Cadmium 30ppm
Chromium 1230ppm
Lead 920ppm
Mercury 0.45ppm
Thallium 3.0ppm
Vanadium 151ppm

S12 - Snake River (Water Sample, ppb)

Arsenic 95ppb
Cadmium 15ppb
Chromium 357ppb
Lead 79ppb

ORGANIC

S13 (Field Blank) ppb

VOAs - All values U or J. Methylene Chloride and Acetone found in blanks as well - B values - at low levels.
SEMI VOAs - All values U
TIC - 2 low level SVOAs detected, J values.

S01 (Matrix Spike) ppb
VOAs - All U except for Methylene Chloride and Acetone which are JB at low levels.
SEMI VOAs - All U

TIC - 4 low level BNAs, J or JB.

Comments: One TIC somewhat high.

SG2 (Drainage Ditch) ppb

VOAs - All U except 2-Butanone 6J and M. C. and Acetone low level JB.
SEMI VOA - All U
TIC - 1 low level VOA and 2 low level ASN, all J.

SG3 (Drainage Ditch) ppb

VOAs - All U except For M. C., 2-Butanone and Chlorobenzene JB. Acetone 40B. Toluene 8J.
SEMI VOAs - All U. Samples ran at Medium Concentration, therefore detection high.
TIC - 1 BNA 11000J, a Phthalate.

Comments: The TIC is highest concentration. Unhappy with SV run at medium concentration.

SG4 (WWTP Sludge) ppb

VOAs - All U except M.C. 14B and Acetone 60B. 2-Butanone 11JB and Chlorobenzene 6JB. 1,1,1-Trichloroethane and Trichloroethene 6J and 3J respectively.
SEMI VOAs - All U, all run at Medium Concentration!
PESTICIDES/PCBs - All U at medium concentrations.
TIC - 2 BNA, 85000J and 84000JB. 1 VOA at 25J

Comments: Some lab contamination and possible low level VOAs. Unsure why SV run at Medium concentrations.

SG5 (Gypsum Pile) ppb

VOAs - All U except For: Carbon Disulfide 8J. JB values; M.C. 6A, 2-Butanone 40, Chlorobenzene 17. B values; Acetone 650. DETECTED SAMPLES: 2-Hexanone 110, Ethylbenzene 50, Styrene 49.
SEMI VOAs - All U at Medium Concentrations.
TICs - Several ASN and VOA all J or JB.

COMMENTS: Some concern over numerous TICs and Medium Concentration of SV.

SG6 (Gypsum Piles -B) ppb

VOAs - All U except for: JB - M.C. 23, B - Acetone 170, J - Carbon Disulfide 9. DETECTED SAMPLES - 2- BUTANONE 59.
SEMI VOAs -All U except for Benzoic Acid 6J.
TICs - Several ABN and 1 VOA all J.

607 (Bypass Piles - R) ppb

VOAs - All U except for: M.C. - 85JB, Acetone - 1500B, DETECTED SAMPLE - 2-Butanone 720.
SEMI VOAs - All U
TICs - Several ABNs, all J.

608 (Pit 11) ppb

VOAs - All U except for: M.C.(6JB). DETECTED 2-Butanone.
SEMI VOAs - All U.
TIC - Several VOA and ABN, all J.

609 (Fly Ash/Pit - N) ppb

VOAs - M.C. (12B), Acetone (30B), 2-Butanone (6JB), Chlorobenzene (2JB), DETECTED 1,1,1-Trichloroethane (10)
SEMI VOAs - All U or J (detection level marked as low concentration but detection levels look too high, probably medium concentration).
TICs - Several ABN, all J or JB. Some in the ppm range for detection.

COMMENTS: Low level 1,1,1-TriChloroethane of moderate concern. Numerous TICs also of moderate concern.

610 (Fly Ash/Pit N -Deep) ppb

VOAs - All U except for: M.C. (4JB), 2-Butanone (6JB), Chlorobenzene (3JB), Acetone (23B).
SEMI VOAs - All U and one J. Detection levels look high for low concentration, probably medium concentration.
Pesticides/PCBs - All U
TICs - Two ABNs, one J one JB.

611 (Fly Ash/Pit - S) ppb

VOAs - All U except for: M.C. (3JB), 2-Butanone (7JB), Chlorobenzene (3JB), Acetone (23B).
SEMI VOAs - All U, high detection levels.
Pesticides/PCBs - All U except for AROCLOR -1260 - 64J.
TICs - SEveral ABNs and VOAs, all J and one JB.

S12 (Snake River) ppb

VOAs - All U except for: M.C. (81J8), Acetone (4900), DETECTED 2-Butanone (320).
SEMI VOAs - Several constituents detected, others J or U.
DETECTED: Naphthalene (440), 2-Methylnaphthalene (270), Acenaphthylene (750), Acenaphthene (340), Fluorene (450), Phenanthrene (910), Anthracene (240), Fluoranthene (200), Pyrene (410), Chrysene (53).
TICs - Several ABNs, all J.

COMMENTS: The VOA and all the SVs are low level contamination, but a cumulative contamination is high and of concern.

S13 (BKGD) PPB
VOAs - All U except for: M.C. (3J8), Acetone (11J0), 2-Butanone (8J3), Chlorobenzene (3J8).
SEMI VOAs - All U.
TICs - 4 ABNs, ALL J and one JB.

COMMENTS: The constituents found in the blank samples should be considered when making a final constituent contamination evaluation.

SUMMARY OF ORGANICS

Based on the evaluation of the above data, the following locations are determined to have organic contamination. Any constituent detected (above background and not detected as a lab contaminant) would constitute contamination.

SGS - Gypsum Pile

Ethylbenzene - 30ppb
Styrene - 49ppb

S12 - Snake River

Several Semi VOAs, see above.

R ATTACHMENT 2

EPA Notification o .lazardous Waste Site

United States
Environmental Protection
Agency
Washington DC 20460

is initial notification information is equired by Section 102(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and must be mailed by June 9, 1981.

Please type or print in ink. If you need additional space, use separate sheets of paper. Indicate the letter of the item which applies. 810608

IL #253 ILS-000-001-335

A Person Required to Notify:

Enter the name and address of the person or organization required to notify.

Name: U. S. Industrial Chemicals Company
Street: P. O. Box 218
City: Tuscola State: IL Zip Code: 61953

B Site Location:

Enter the common name (if known) and actual location of the site.

ILD005078126

Name of Site: U. S. Industrial Chemicals Company
Street: 3 miles west of U.S. 45 on U.S. 36
City: Tuscola County: Douglas State: IL Zip Code: 61953

C Person to Contact:

Enter the name, title (if applicable), and business telephone number of the person to contact regarding information submitted on this form.

Name (Last, First and Title): Tadler, Thomas Plant Manager
Phone: 217-253-3311

D Dates of Waste Handling:

Enter the years that you estimate waste treatment, storage, or disposal began and ended at the site.

From (Year): 1953 To (Year): mid-1970's

E Waste Type: Choose the option you prefer to complete

Option 1: Select general waste types and source categories. If you do not know the general waste types or sources, you are encouraged to describe the site in Item I—Description of Site.

General Type of Waste:
Place an X in the appropriate boxes. The categories listed overlap. Check each applicable category.

1. ☒ Organics
2. ☒ Inorganics
3. ☒ Solvents
4. ☐ Pesticides
5. ☐ Heavy metals
6. ☒ Acids
7. ☐ Bases
8. ☐ PCBs
9. ☐ Mixed Municipal Waste
10. ☒ Unknown
11. ☐ Other (Specify)

Source of Waste:
Place an X in the appropriate boxes.

1. ☐ Mining
2. ☐ Construction
3. ☐ Textiles
4. ☐ Fertilizer
5. ☐ Paper/Printing
6. ☐ Leather Tanning
7. ☐ Iron/Steel Foundry
8. ☒ Chemical, General
9. ☐ Plating/Polishing
10. ☐ Military/Ammunition
11. ☐ Electrical Conductors
12. ☐ Transformers
13. ☐ Utility Companies
14. ☐ Sanitary/Refuse
15. ☐ Photofinish
16. ☐ Lab/Hospital
17. ☐ Unknown
18. ☐ Other (Specify)

Option 2: This option is available to persons familiar with the Resource Conservation and Recovery Act (RCRA) Section 3001 regulations (40 CFR Part 261).

Specific Type of Waste:
EPA has assigned a four-digit number to each hazardous waste listed in the regulations under Section 3001 of RCRA. Enter the appropriate four-digit number in the boxes provided. A copy of the list of hazardous wastes and codes can be obtained by contacting the EPA Region serving the State in which the site is located.

000114 JUN-881

Form Approved
OMB No. 2000-0138
EPA Form 8900-1

JUN 12 1981

Notification of Hazardous Waste Si'

Side Two

F Waste Quantity:

Place an X in the appropriate boxes to indicate the facility types found at the site.

In the "total facility waste amount" space give the estimated combined quantity (volume) of hazardous wastes at the site using cubic feet or gallons.

In the "total facility area" space, give the estimated area size which the facilities occupy using square feet or acres.

Facility Type

1. ☐ Piles
2. ☐ Land Treatment
3. ☒ Landfill
4. ☐ Tanks
5. ☒ Impoundment
6. ☐ Underground Injection
7. ☐ Drums, Above Ground
8. ☐ Drums, Below Ground
9. ☐ Other (Specify) _____

Total Facility Waste Amount

cubic feet: Unknown

gallons:

Total Facility Area

square feet:

acres: approximately 40

G Known, Suspected or Likely Releases to the Environment:

Place an X in the appropriate boxes to indicate any known, suspected, or likely releases of wastes to the environment.

☐ Known ☒ Suspected ☐ Likely ☐ None

Note: Items H and I are optional. Completing these items will assist EPA and State and local governments in locating and assessing hazardous waste sites. Although completing the items is not required, you are encouraged to do so.

H Sketch Map of Site Location: (Optional)

Sketch a map showing streets, highways, routes or other prominent landmarks near the site. Place an X on the map to indicate the site location. Draw an arrow showing the direction north. You may substitute a publishing map showing the site location.

See Attachment 1 - USGS Map of General Area

and

Attachment 2 - Facility Drawing

I Description of Site: (Optional)

Describe the history and present conditions of the site. Give directions to the site and describe any nearby wells, springs, lakes, or housing. Include such information as how waste was disposed and where the waste came from. Provide any other information or comments which may help describe the site conditions.

Available information indicates portions of this site were used to store an aqueous 25 to 50% spent sulfuric acid solution from approximately 1953 until the mid 1970's. During this period most of the acid solution was siphoned from various pit impoundments to a nearby lime neutralization facility where it was treated prior to discharge.

We have no known records to confirm that other materials were discarded into these pits; however, we suspect various substances (waste insulation, catalysts, miscellaneous solvents, etc.) may have been introduced prior to converting the impoundment areas to landfills with a slightly alkaline fly ash.

J Signature and Title:

The person or authorized representative (such as plant managers, superintendents, trustees or attorneys) of persons required to notify must sign the form and provide a mailing address (if different than address in item A). For other persons providing notification, the signature is optional. Check the boxes which best describe the relationship to the site of the person required to notify. If you are not required to notify check "Other".

Name: T. J. Tadler

Street: U. S. Industrial Chemicals Co. P. O. Box 218

City: Tuscola State: IL Zip Code: 61953

Signature: Tadler Date: 4/5/81

☒ Owner, Present
☐ Owner, Past
☐ Transporter
☐ Operator, Present
☐ Operator, Past
☐ Other

ATTACHMENT 3

one grade of resin to another we occasionally generate limited quantities of waste organic peroxide solution. These solutions meet the EPA's ignitability criterion defined in Section 261.21. These wastes are destroyed in a petrochemical process flare, and, therefore, are included in our Part A application under Thermal treatment (T04) of ignitable waste.

We have determined that our original estimate of the quantity of this material treated was too high. Our amended application presents a revised estimate based on present and anticipated production requirements.

(5) Deletion of D007 - EP Toxicity (Chromium)

The USI Tuscola plant operates seven cooling towers which are an integral part of an EPA-sanctioned water conservation program. When water is reused in this manner the concentration of solids increases as water evaporates from the system. To prevent the fouling of our process cooling system due to deposition of these solids, it is necessary to add a small amount of sulfuric acid to reduce the cooling water pH to approximately 6.5. Unfortunately, at this pH excessive corrosion of process piping and equipment will occur unless a corrosion inhibitor is added. Betz Dianodic - 190 was used for this purpose until July 20, 1980. At this point, the use of a liquid chromate solution (Betz 45) was instituted in all but one of the cooling towers. Because the blowdown from the cooling towers contains chromium we estimated that its concentration in a lagoon through which it is discharged could exceed the RCRA EP toxicity level of 5.0 mg/l. Therefore, we included the surface impoundment storage (S04) and treatment (T04 - hexavalent chromium reduction) of EP toxic waste (D007) on our original Part A permit application.

Since the original application was filed, we have generated analytical data and performed material balance calculations that we believe conclusively establish that the wastewater discharged from the lagoon is not a RCRA-regulated waste because of its chromium content. As a result, we have deleted D007 and the associated storage and treatment from our amended application.

ATTACHMENT 4

Table 2-1

AVERAGE TRACE-ELEMENT CONTENTS
FOR COALS FROM VARIOUS REGIONS
OF THE U. S. (ppm)

Element	SWI[a]	EI[b]	NGP[c]	APP[d]
Boron	33	96	116	25
Beryllium	1.1	2.5	1.5	2.5
Cobalt	4.6	3.8	2.7	5.1
Chromium	13	20	7	13
Gallium	2.0	4.1	5.5	4.9
Germanium	5.9	13	1.6	5.8
Lanthanum	6.5	5.1	9.5	9.4
Molybdenum	3.1	4.3	1.7	3.5
Nickel	14	15	7.2	14
Tin	1.3	1.5	0.9	0.4
Titanium	250	450	591	350
Vanadium	18	35	16	21
Yttrium	7.4	7.7	13	14
Zinc	108	44	59	7.6

[a]SWI = Forty-eight coals from Western and Southwestern Interior Region.

[b]EI = Eastern Interior Region, 53 coals.

[c]NGP = Northern Great Plains Region, 51 samples.

[d]APP = Seventy-three coals from Appalachian Region.

Source: Los Alamos Scientific Laboratory. Environmental Contamination from Trace Elements in Coal Preparation Wastes. Springfield, VA: National Technical Information Service, August 1976. PB 267 339.

FROM: Coal Ash Disposal Manual
EP-1257 Research Project 1404-1
By: GAI Consultants 1978

Table 2-2

RANGE OF TRACE ELEMENTS IN U. S. COALS

Element	Range (ppm)
Beryllium	0 - 31
Boron	1.2 - 356
Fluorine	10 - 295
Phosphorus	5 - 1430
Scandium	10 - 100
Vanadium	0 - 1281
Chromium	0 - 610
Manganese	6 - 181
Cobalt	0 - 43
Nickel	0.4 - 104
Copper	1.8 - 185
Gallium	0 - 61
Germanium	0 - 819
Arsenic	0.5 - 106
Selenium	0.4 - 8
Bromine	4 - 52
Yttrium	<0.1 - 59
Zirconium	8 - 133
Molybdenum	0 - 73
Cadmium	0.1 - 65
Tin	0 - 51
Antimony	0.2 - 9
Lanthanum	0 - 98
Mercury	0.01 - 1.6
Lead	4 - 218
Uranium	<10 - 1000

Source: Los Alamos Scientific Laboratory. Environmental Contamination from Trace Elements in Coal Preparation Wastes. Springfield, VA: National Technical Information Service, August 1976. PB 267 339.

AA IN Air at 1100° F

Table 2-8

AVERAGE TRACE-ELEMENT CONTENTS
OF THE ASH FROM U. S. COALS OF VARIOUS RANK (ppm)

Element	Anthracite	Low Volatile Bituminous	Medium Volatile Bituminous	High Volatile Bituminous	Lignite and Subbituminous
Silver	<1	<1	<1	<1	<1
Boron	90	123	218	770	1,010
Barium	866	740	896	1,253	5,027
Beryllium	9	16	13	17	6
Cobalt	81	172	105	64	45
Chromium	304	221	169	193	54
Copper	405	379	313	293	655
Gallium	42	41	--	40	23
Germanium	<20	<20	--	--	--
Lanthanum	142	110	83	111	62
Manganese	270	280	1,432	120	688
Nickel	220	141	263	154	129
Lead	81	89	96	183	60
Scandium	61	50	56	32	18
Tin	962	92	75	171	156
Strontium	177	818	668	1,987	4,660
Vanadium	248	278	390	249	125
Yttrium	106	152	151	102	51
Ytterbium	8	10	9	10	4
Zinc	--	231	195	310	--
Zirconium	688	458	326	411	245

Source: Los Alamos Scientific Laboratory. Environmental Contamination from Trace Elements in Coal Preparation Wastes. Springfield, VA: National Technical Information Service, August 1976. PB 267 339.

Table 2-10

PARTITION OF ELEMENTS BY THEIR TENDENCIES FOR DISTRIBUTION IN COAL COMBUSTION RESIDUES

Group I

Elements Concentrated Approximately Equally in Bottom Ash and Fly Ash

Al	Ce	Fe	La	Rb	Sm	Th
Ba	Co	Hf	Mg	Sc	Sr	Ti
Ca	Eu	K	Mn	Si	Ta	

Group II

Elements Preferentially Concentrated in the Fly Ash

As	Ga	Sb
Cd	Mo	S
Cu	Pb	Zn

Group III

Elements Tending to be Discharged to Atmosphere as Vapors

Hg	Cl
	Br

Source: S. S. Ray and F. G. Parker. Characterization of Ash From Coal-Fired Power Plants. Springfield, VA: National Technical Information Service, January 1977. EPA-600/7-77-010.

Table 2-11

ASH SOLIDS ANALYSES (in ppm)

Substance	Fly Ash Range	Avg.	Data Pts.
Arsenic	6 - 1,200	177	23
Barium	100 - 1,074	520.7	6
Cadmium	0.29 - 51	10	17
Chloride	-	1,000	1
Chromium	15 - 900	218.6	18
Copper	16 - 400	171	17
Fluoride	120 - 671	396	2
Iron	49,000 - 235,000	124,125	8
Lead	11 - 800	210.7	19
Manganese	100 - 1,000	389	16
Nitrate	-	85.6	1
Selenium	6.9 - 760	145	14
Silver	-	3	1
Sulfate	-	5,430	1
Zinc	50 - 9,000	1,314.3	20

Substance	Bottom Ash Range	Avg.	Data Pts.
Arsenic	0.5 - 18	7	14
Barium	300 - 731	481.6	7
Cadmium	0.5 - 3	1.25	12
Chloride	-	-	-
Chromium	15 - 895	213	13
Copper	12 - 300	87.2	12
Fluoride	-	10.6	1
Iron	66,000 - 211,900	116,100	9
Lead	3 - 30	13.2	11
Manganese	100 - 1,000	438.7	15
Nitrate	-	16	1
Selenium	0.08 - 20	5.45	11
Silver	-	-	-
Sulfate	-	675	1
Zinc	20 - 400	142	12

Source: D. W. Weeter and M. P. Bahor. Technical Aspects of the Resource Conservation and Recovery Act Upon Coal Combustion and Conversion Systems. Oak Ridge National Laboratory, February 1979. ORNL/OGPA-10.

Table 2-12

ANALYSES OF ASH POND DISCHARGES (in ppm)

Substance	Fly Ash Pond Range	Avg.	Data Pts.
Arsenic	0.01 - 1.1	0.38	3
Barium	0.2 - 0.3	0.25	2
Cadmium	0.001 - 0.037	0.019	2
Chloride	6 - 7	6.5	2
Chromium	0.02 - 0.067	0.044	2
Copper	0.02 - 2.4	0.91	3
Cyanide	-	-	-
Iron	1.44 - 630	211.12	3
Lead	0.01 - 0.91	0.33	3
Manganese	0.13 - 0.48	0.31	2
Selenium	0.002 - 0.33	0.12	3
Silver	-	-	-
Sulfate	209 - 358	283.5	2
Zinc	0.06 - 2.2	1.26	3

Substance	Bottom Ash Pond Range	Avg.	Data Pts.
Arsenic	0.006 - 0.018	0.012	2
Barium	0.1 - 0.2	0.15	2
Cadmium	0.001 - 0.003	0.002	2
Chloride	7 - 8	7.5	2
Chromium	0.009 - 0.01	0.095	2
Copper	0.041 - 0.065	0.053	2
Cyanide	-	-	-
Iron	5.29 - 5.98	5.64	2
Lead	0.02 - 0.02	0.02	2
Manganese	0.16 - 0.58	0.37	2
Selenium	0.002 - 0.011	0.007	2
Silver	-	-	-
Sulfate	49 - 139	94	2
Zinc	0.09 - 0.14	0.12	2

Substance	Combined Ash Pond Range	Avg.	Data Pts.
Arsenic	0.005 - 0.038	0.038	9
Barium	0.1 - 0.2	0.19	10
Cadmium	0.001 - 0.005	0.002	6
Chloride	3 - 14	7.2	10
Chromium	0.004 - 0.043	0.015	10
Copper	0.01 - 0.08	0.042	10
Cyanide	0.01 - 0.05	0.03	3
Iron	0.23 - 2.3	0.8	10
Lead	0.01 - 0.025	0.014	10
Manganese	0.01 - 0.39	0.09	9
Selenium	0.003 - 0.065	0.016	10
Silver	-	0.01	1
Sulfate	59 - 156	109.7	10
Zinc	0.03 - 0.12	0.053	10

Source: Same as Table 2-11.

Table 2-13

RESULTS OF LEACHATE TESTS ON COAL ASH

Analysis	Bituminous Coal Fly Ash			Bituminous Coal Bottom Ash			Bituminous Coal Boiler Slag		
	ASTM "A" (16)*	ASTM "B" (16)	EPA E.P. (16)	ASTM "A" (5)	ASTM "B" (5)	EPA E.P. (5)	ASTM "A" (3)	ASTM "B" (3)	EPA E.P. (3)
pH	4.38-12.5	4.5-5.2	4.87-5.57	3.41-8.6	4.5-4.81	4.75-5.3	3.40-6.8	4.44-4.6	3.6-4.8
Ca (mg/l)	150-583	275-1708	36.6-331	8.0-210.0	30.0-320.0	1.2-110.0	3-49	5-51	1-115
Ag (mg/l)	0.0004-0.045	0.0003-0.06	0.0001-0.04	<0.01-<0.05	<0.01-<0.05	<0.01-<0.05	0.01-<0.05	<0.01-<0.05	0.02-<0.05
As (mg/l)	0.0021-2.11	0.8-7.3	0.00059-2.046	0.006-0.2	<0.002-0.4	0.007-<0.4	0.002-0.2	0.002-0.6	<0.01-<0.4
Ba (mg/l)	<0.02-79	0.11-1.0	<0.02-0.5	0.04-0.2	<0.25-0.52	<0.1-0.13	0.07-<0.25	0.09-0.75	0.01
Cd (mg/l)	<0.0002-0.04	0.002-0.05	<0.00005-0.06	<0.003-<0.05	0.004-<0.05	<0.003-<0.05	<0.01-<0.05	<0.01-<0.05	0.03-<0.05
Cr (mg/l)	0.008-0.23	0.04-0.74	0.008-0.39	<0.01-<0.05	<0.01-0.05	<0.01-<0.05	<0.01-<0.05	<0.01-<0.05	<0.01-0.02
Hg (mg/l)	<0.000005-0.020	0.000011-0.5	<0.000001-25.0	0.0003-<0.005	<0.0001-<0.005	0.0003-<0.005	<0.0001-<0.005	0.0001-<0.005	0.0004-<0.005
Pb (mg/l)	<0.001-0.09	<0.001-0.2	<0.00001-0.7	<0.01-<0.2	0.018-<0.15	<0.1-<0.5	<0.01-0.2	0.015-<0.15	<0.01-0.3
Se (mg/l)	0.14-1.25	0.1-1.41	0.0001-1.56	0.070-<0.1	0.002-<0.5	<0.01-<0.2	<0.01-<0.5	<0.01-<0.5	<0.01-<0.2

*Number in parentheses is the number of laboratories reporting an analysis of the ash.

Source: The preliminary information upon which this table is based was furnished by B. C. Malloy, Chairman of ASTM Subcommittee D19.12.

Table 2-13
(Continued)

RESULTS OF LEACHATE TESTS ON COAL ASH

Analysis	Lignite Coal Fly Ash			Subbituminous Coal Fly Ash		
	ASTM "A" (7)	ASTM "B" (7)	EPA E.P. (7)	ASTM "A" (4)	ASTM "B" (4)	EPA E.P. (4)
pH	11.34-12.3	5.6-12.3	4.95-11.45	12.1-13.3	12.01-13.3	5.23-12.55
Ca (mg/l)	190-538	200-1500	310-1300	22-1100	682-1900	682-2000
Ag (mg/l)	<0.009-0.04	0.007-0.04	<0.009-0.04	<0.01-0.09	<0.01-0.08	<0.01-0.08
As (mg/l)	<0.01-0.2	<0.01-0.65	0.004-1.8	<0.002-0.03	0.003-0.4	<0.002-0.5
Ba (mg/l)	0.1-1.069	0.1-1.31	0.1-1.98	0.1-100	0.4-125	0.3-0.94
Cd (mg/l)	0.006-<0.5	0.0013-<0.5	<0.01-0.58	<0.01-<0.05	<0.01-<0.05	<0.01-<0.05
Cr (mg/l)	<0.01-0.78	<0.01-0.56	0.031-0.15	<0.01-0.10	<0.01-0.25	<0.01-0.39
Hg (mg/l)	<0.001-<0.005	<0.0001-<0.005	<0.0001-<0.005	0.0001-0.08	<0.0001-0.11	<0.0001-0.08
Pb (mg/l)	<0.00972-<0.1	0.0047-<0.1	<0.001-0.4	<0.01-0.1	<0.01-0.2	<0.01-0.3
Se (mg/l)	0.0693-1.0	0.06-1.5	0.0176-1.0	<0.01-<0.5	0.032-0.3	<0.002-0.5

Source: The preliminary information upon which this table is based was furnished by B. C. Malloy, Chairman of ASTM Subcommittee D19.12.

ILD 005078126

U.S. Industrial Chemicals Company
P.O. Box 218
Tuscola, Illinois 61953

Statement of Work

Introduction/Background

The FY '88 RCRA Implementation Plan (RIP) requires that RCRA Facility Assessments (RFAs) be completed during FY '88 for all land disposal facilities seeking a permit, and for 30% of the closing land disposal facilities. The Region V targets for RFAs in FY '88 are tied directly to our quarterly commitments for the Strategic Planning and Management System (SPMS). Completion of these activities are the highest priority for the Solid Waste Branch, and adherence to the established schedules is imperative.

Corrective Action Needs

A Preliminary Review (PR) and Visual Site Inspection (VSI) were performed during FY '88 for U.S. Industrial Chemicals Company. The information reviewed indicated that there is a potential for releases. The Region has determined that a sampling visit should be performed to document a release if it exists.

Work to be Performed

1) Contractor will take samples as specified in the attached sampling plan.

2) Contractor shall provide the sample packaging & forwarding to the Laboratory assigned by Region V CLP program management according to the chain of custody procedures.

3) The contractor will then prepare a written sampling report for Region V upon completion of work. This report must include a complete description of sampling processes used, special preparations, if any, unusual circumstances encountered, and chain-of-custody procedures.

4) Contractor shall tabulate analytical data, received from CLP laboratories through U.S. EPA Region V technical contact, evaluate them and make recommendations for future actions.

This project is expected to be completed according to the schedule negotiated between the contractor and EPA.

Deliverables and Due Date

Sampling report should be submitted to U.S. EPA within 15 work days of work completion. It should contain the description of sampling trip, where the samples were taken from, how did it go, providing a list of all the samples taken and any problems encountered during sampling.

Review analytical data reports and make recommendations for future actions within 30 days of receiving the laboratory reports.

Travel Requirements

The contractor will take the samples, specified in sampling plan, at U.S. Industrial Chemicals Company in Tuscola, IL. The sampling team travel expenses shall be itemized and included in the work plan.

Sampling Project Cost Estimate

Item	Person-Hour	Cost ($)
Work plan development	8	400
Sampling plan review	8	400
Sampling trip (3 persons/2 days)	60	3000
Data Evaluation	27	1350
Report preparation	8	400
Administrative Expenses	9	450
Other direct costs	30	1500
	150	7500

Note: Technical monitor and Contractor will negotiate sampling plan to ensure that person-hours expended will not exceed our estimate.

RFA SAMPLING PLAN

U.S. Industrial Chemicals Company
ILD 005078126
P.O. Box 218
Tuscola, IL 61953

I. General Facility Information

U.S. Industrial Chemicals Company (USI) is a hydrocarbon processing plant located in Tuscola, Illinois. USI is a division of Natural Distillers and Chemical Corporation. The facility is located 3 miles west of US 45 on US 36, about 3 miles west of the town of Tuscola, Il. USI has operated at this site since 1953. The facility occupies 776 acres, including farmland. The surrounding area is dominantly agricultural with Cabot Corporation bordering the facility to the southeast. Population within one mile is approximately 340, and approximately 1230 within 3 miles.

Liquid Petroleum Gas: propane, butanes, and pentane are the facilities main products. Ethylene, ethyl alcohol, ethers, and polyethylene are also produced. Sulfuric and Phosphoric acid was produced prior to 1971.

In their original Part A, listed wastes included: F001, U210, D002, D001, D007, P120, and U013. Wastes U013, U210, P120 and D007 were later deleted. Of those wastes remaining on the Part A, a D002 surface impoundment, a D001 thermal treatment unit, and a F001 drum storage area have gone through approved closure. Subsequently, USI is no longer seeking a RCRA permit, although they are a generator.

II. Sampling Objectives

This facility has several areas which need to be addressed under the HSWA authority for past and present SWMU activity. Of primary concern are: 1) several abandoned sulfuric acid pit areas and, 2) gypsum piles with associated leachate collection ditches and ponds from the past production of phosphoric acid.

The acid pits were used to store 25-50% sulfuric acid between 1953 and 1971. These abandoned pits may have accepted solvents (possibly halogenated), catalysts (Vandium salts used during sulfuric acid production), insulation, and unknown waste prior to being converted to fly ash disposal and material storage areas. Direct sampling of these pits is impractical due to the

very large quantity of flyash and other materials presently covering these areas. Because of this, sampling must be limited to bordering and drainage areas.

The two gypsum piles, covering approximately 57 acres, are from the 14 year production (1957-1971) of phosphoric acid. There are also corresponding leachate collection ditches and holding ponds (about 20 acres). While the gypum is non-hazardous, there is documentation that additional wastes: WWTP sludge, polyethylene pellets/powder, and gypsum pile leachate, have been disposed of on top of the west gypsum pile. Past IEPA field inspections have also noted that the leachate in the collection ditches and ponds had a very low pH, about 2. During the RFA site visit USI representatives claimed that the leachate has moderated to a higher pH.

Other SWMU's include the WWTP lagoons, earthern drainage ditches, and potentially the snake river surface impoundment. The objective of this sampling visit is to characterize the site and see whether or not there have been releases of hazardous constituents which would pose a threat to human health and the environment.

III. Units to be Sampled (see attached maps)

A) Monitoring Well G106

1) Description - G106 is the monitoring well at the NE corner of the east gypsum pile.

2) Wastes managed - see description of gypsum piles in section II.

3) Samples - One water sample. The well has a dedicated sampling system consisting of an internal tube which can be hooked to an exterior pump. The facility will supply the pump and has agreed to purge the well prior to the sampling visit. The well has a long recovery period. Additionally, I would like field data for pH, specific conductance, and well head volatiles (OVA).

4) Potential Sampling Problems - Will contact the facility prior to the sampling visit to assure access, and operating condition of the well. Bring a stainless steel bailer in case the dedicated system malfunctions the day of sampling.

5) Constituents to be analyzed for: RAS inorganics: Metals. RAS organics: volatiles, semi-volatiles. See #3 for additional field data requested.

B. Drainage Ditches

1) Description - All surface drainage on the facility is routed to the WWTP with the exception of a small portion near the southwest area of their plant which drains off-site. Other ditches on-site carry facility runoff and holding pond liquid to the WWTP. Ditches are earthen with easy access.

2) Waste Managed - See below (C)

3) Samples - 1 water and 1 sediment, with field pH.

4) Potential sampling problems - If the weather is dry prior to the visit it may not be possible to collect the water samples. If this is the case, a sediment sample will be substituted.

5) Constituents to be analyzed for: Water sample - RAS organics: volatiles, semi-volatiles. Sediment sample - RAS metals. RAS organics: volatiles, semi-volatiles.

C. WWTP Sludge Ponds

1) Description - USI has several ponds in the northwestern portion of the facility for their WWTP sludge.

2) Waste Managed - Industrial and domestic/sanitary sewage. Waste constituents treated include: alchol, ethers, and benzene. Acid and caustic lab wastes are also sent to the WWTP.

3) Samples - 1 sediment/sludge sample, 12-18" depth.

4) Potential sampling problems - Soft sediment.

5) Constituents to be analyzed for: RAS inorganics: metals. RAS organics: volatiles, semi-volatiles, PCB's.

D. Gypsum Piles and associated ditches

1) Description - See description in II.

2) Waste Managed - Gypsum, acidic leachate, ion-exchange waste (potential pH extremes), polyethylene powder with surfactant, WWTP sludge.

3) Samples - 1 sediment, 2 water/liquid. Would like several field pH readings taken.

4) Potential sampling problems - possiblity of low pH waters.

5) Constituents to be analyzed for: RAS organics: volatiles, semi-volatiles.

E. Pit 11

1) Description - Temporary holding pond as part of the WWT system.

2) Waste Managed - Waste water headed for the WWTP. This pond is used for temporary storage if the volume of waste water exceeds the WWTP capacity. Some pretreatment has occured before the water reaches this pond. Polyethylene pellets and oil were observed in the pond during the VSI.

3) Samples - 1 water and field pH.

4) Potential Sampling Problems - The liquid is several feet below the top of the berm and the sides of the berm are relatively steep.

5) Constituents to be analyzed for: RAS organics; volatiles, semi-volatiles.

F. Flyash Disposal area/Old Acid Pit Area (north area).

1) Description - A large area south of the Gypsum piles used for flyash disposal.

2) Waste managed - flyash disposed above old acid pits (see II).

3) Samples - 1 sediment sample and 1 deep, 5-10', soil sample with a soil gas readings (OVA). Take soil sample from 10' depth or when water table is reached. Water table is reportedly within the top several feet.

4) Potential Sampling Problems - Potential for encountering hard subsurface. The subsurface is glacial till, dominantly clays and silt.

5) Constituents to be analyzed for: RAS inorganics: metals. RAS organics: volatiles, semi-volatiles, PCB's. Analyze for PCB's from the deep sample only.

G. Fly ash Disposal Area/Old Acid Pit Area (central area)

1) Description - two fly ash disposal areas approximately centrally located. Near railroad tracks, coal pile, and electricity generator facility.

2) Waste managed - See F.

3) Samples - One deep, 5-10', soil sample and soil gas.

4) Potential Sampling Problems - see F.

5) Constituents to be analyzed for: RAS inorganics: metals. RAS organics: volatiles, semi-volatiles, PCB's.

H. Snake River Surface Impoundment

1) Description - This S.I. was originally used as a neutralization pond. The pond was closed under IEPA authority. In ground tanks with a connecting pipe were installed to bypass the impoundment. However, the tanks have overflow grates which would allow effluent to again enter the impoundment during high flow events. Polyethylene pellets and oil scum were observed in the impoundment during the VSI.

2) Waste managed - low pH waste. Originally listed for Chromium reduction also.

3) Samples - 1 water and field pH.

4) Potential Sampling Problems - May need to substitute a soil sample for the water sample if dry weather precedes the sampling event.

5) Constituents to be analyzed for: RAS inorganics: metals. RAS organics: volatiles, semi-volatiles.

I. Background Samples

1) Location of background soil samples has yet to be determined. Bordering farmland will probably be used.

2) Waste managed - NA.

3) Samples - 1 soil, 18-24' depth.

4) Potential sampling problem - None apparent.

5) Constituents to be analyzed for: RAS inorganics: metals. RAS organics: volatiles, semi-volatiles.

IV. Analytical Requirements

The objective for the analyses is to determine the presence or absence of contamination from activities that occurred at the site.

Parameters to be analyzed for are:

(See sampling location descriptions for site specific parameters)

#Samples	Type	Parameters	
7	soil/sediment	6 RAS Inorganics:	Metals
		4 RAS Organics:	Volatiles, Semi-volatiles
		3 RAS Organics:	Volatiles, Semi-volatiles, PCB's
6	water/liquid	2 RAS Inorganics:	Metals
		6 RAS Organics:	Volatiles, Semi-volatiles

V. Sampling

Use containers from the sample bottle repository program.

A. For soil samples, use augers to take samples to 15-18" depth, power drills to get down to ten feet depth. The samples are to be collected into 250-500 ml glass jars, equipped with Teflon lined screw caps. Tape the lid carefully, mark these and put on the initials of the collector. No refrigeration is needed. Pack the samples carefully with chain-of-custody papers (forms). Always prepare equipment blanks when equipment is reused; use appropriate aliquots for each parameter.

B. Sludge Sampling

Use hand covers for obtaining samples, other procedures as above. Samples for metal analysis should be preserved by refrigeration and chemical additives. First filter it on a coarse filter, then split

the aqueous sample; filter one part of it on a 0.45 micron filter, transfer into container, add Nitric acid to pH<2. Preserve the other part.

C. Water Sampling

Use glass sample containers with a volume of a minimum 500 ml. Preserve samples for metal analysis as above.

D. Special Equipment Request

*OVA meter for soil gas readings in the bottom of the deep soil sampling holes, and for monitoring well head space. (see A, F, G).

*High quality pH meter for several field pH readings. (see A,B,D,E,H).

*Soil sampling equipment for depths to 8-10'. (see F,G).

*Stainless Steel Bailer as a back-up for Monitoring well G106's internal dedicated sampling system. (see A).

(See individual sampling locations for specifics)

VI. Prepare Sampling jars as follows:

A. For metals, clean with:

Nonphosphate detergent in tap water;
1:1 Nitric acid rinse;
1:1 HCl rinse;
Tap water rinse;and
Distilled, deionized water rinse.

B. For organic analysis, remove deposits with:

Chromic acid;
Rinse with tap water;
Wash with nonphosphate detergent in hot water;
Tap water rinse;
Distilled water rinse;
Acetone rinse; and
Pesticide-grade Hexane rinse.

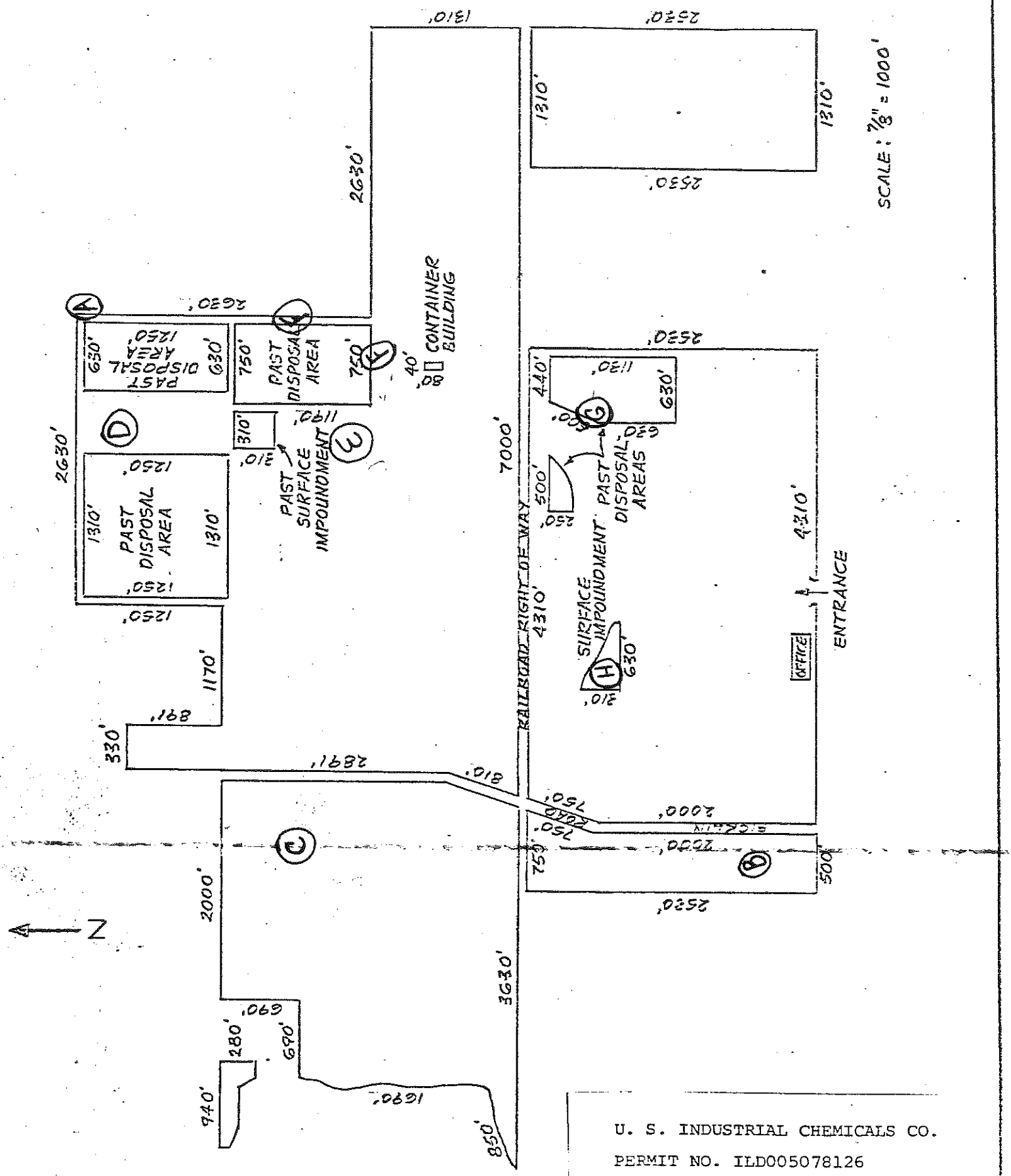
VII. Sample documentation

Sampling procedures must be logged into a log book, including all sampling processes, special holding times, and chain-of-custody procedures.

VIII. Laboratory reports should include:

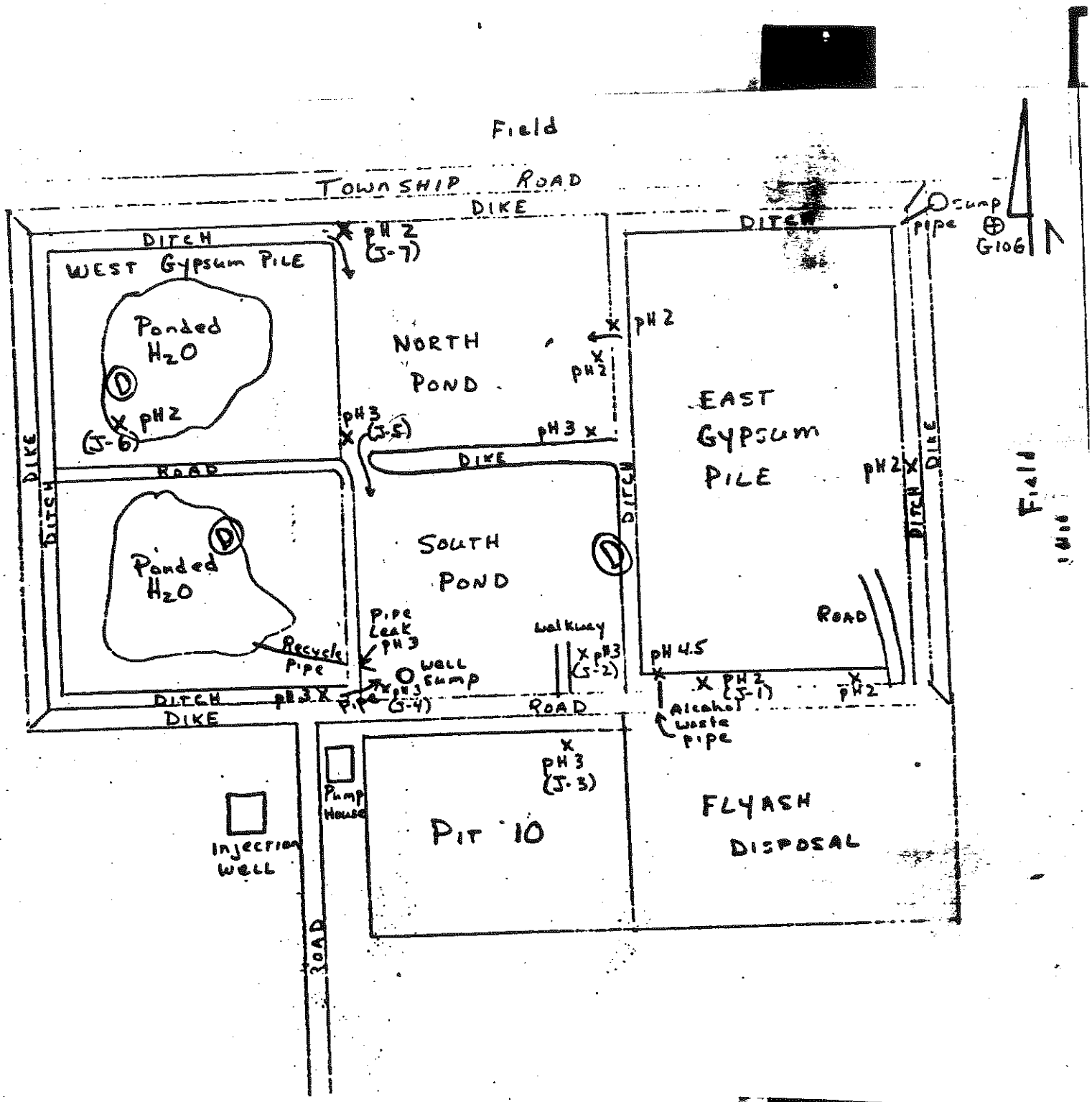
Objective of testing
Test method used for each parameter;
Calibration procedures/Frequency;
Calibration Standards/Sources;
Data Development;

FACILITY DRAWING



U. S. INDUSTRIAL CHEMICALS CO.

PERMIT NO. ILD005078126


Field
TOWNSHIP ROAD
DIKE
DITCH
WEST Gypsum PILE
Ponded H2O
pH 2 (J-7)
pH 2 (J-6)
NORTH POND
pH 2
pH 2
pH 3 (J-5)
pH 3
DIKE
ROAD
DITCH
Ponded H2O
SOUTH POND
EAST Gypsum PILE
pH 2
DITCH
DIKE
Recycle Pipe
Pipe Leak pH 3
well sump
pH 3 (J-4)
pH 3
Walkway
pH 3 (J-2)
pH 4.5
pH 2 (J-1)
pH 2
ROAD
Alcohol waste pipe
DITCH
DIKE
Pump House
pH 3 (J-3)
PIT 10
FLYASH DISPOSAL
Injection well
ROAD
Sump pipe
G106
Field
Field

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: VSI
SUBJECT: SV
LOCATION: OFF-SITE DRAINAGE
(B)
CITY: _____ COUNTY: _____ STATE: _____
DATE: _____ TIME: _____
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) _____
WITNESS: _____
CAMERA: _____
FILM TYPE: _____ ASA: _____ T:1/2 f: _____
NEGATIVE LOCATION: _____ FILE #: _____
PROCESSED BY: _____
PHOTO #: _____ of _____

GPO 835-559

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: _____
SUBJECT: _____
LOCATION: _____
CITY: _____ COUNTY: _____ STATE: _____
DATE: _____ TIME: _____
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) _____
WITNESS: _____
CAMERA: _____
FILM TYPE: _____ ASA: _____ T:1/_____ f: _____
NEGATIVE LOCATION: _____ FILE #: _____
PROCESSED BY: _____
PHOTO #: _____ of _____

GPO 835-559

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: VSI
SUBJECT: _____
LOCATION: SNAKE RIVER
VSI Photo
CITY: _____ COUNTY: _____ STATE: _____
DATE: 3-23-88 TIME: _____
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) _____
WITNESS: _____
CAMERA: _____
FILM TYPE: _____ ASA: _____ T:1/_____ f: _____
NEGATIVE LOCATION: _____ FILE #: _____
PROCESSED BY: _____
PHOTO #: _____ of _____

GPO 835-559

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: USI - TUSCOLA
SUBJECT: SV
LOCATION: MONITORING WELL G106
(A)
CITY: _____ COUNTY: _____ STATE: _____
DATE: _____ TIME: _____
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) KURT KESSLER
WITNESS: _____
CAMERA: _____
FILM TYPE: _____ ASA: _____ T:1/_____ f: _____
NEGATIVE LOCATION: _____ FILE #: _____
PROCESSED BY: _____
PHOTO #: _____ of _____
GPO 835 - 559

See back of photo for further Information

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: USI
SUBJECT: SV
LOCATION: OFF-SITE DRAINAGE
(B)
CITY: _____ COUNTY: _____ STATE: _____
DATE: _____ TIME: _____
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) _____
WITNESS: _____
CAMERA: _____
FILM TYPE: _____ ASA: _____ T:1/_____ f: _____
NEGATIVE LOCATION: _____ FILE #: _____
PROCESSED BY: _____
PHOTO #: _____ of _____
GPO 835 - 559

See Back of Photo

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: USI
SUBJECT: SV
LOCATION: SLUDGE LAGOON
(C)
CITY: _____ COUNTY: _____ STATE: _____
DATE: _____ TIME: _____
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) _____
WITNESS: _____
CAMERA: _____
FILM TYPE: _____ ASA: _____ T:1/_____ f: _____
NEGATIVE LOCATION: _____ FILE #: _____
PROCESSED BY: _____
PHOTO #: _____ of _____
GPO 835 - 559

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: USI
SUBJECT: SV
LOCATION: GYPSUM PILE - Sediment Location
(D)
CITY: _____ COUNTY: _____ STATE: _____
DATE: _____ TIME: _____
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) _____
WITNESS: _____
CAMERA: _____
FILM TYPE: _____ ASA: _____ T:1/_____ f: _____
NEGATIVE LOCATION: _____ FILE #: _____
PROCESSED BY: _____
PHOTO #: _____ of _____
GPO 835 - 559
See back of Photo

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: USI
SUBJECT: GYPSUM PILE - Liquid
LOCATION: Sample
(D)
CITY: _____ COUNTY: _____ STATE: _____
DATE: _____ TIME: _____
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) _____
WITNESS: _____
CAMERA: _____
FILM TYPE: _____ ASA: _____ T:1/_____ f: _____
NEGATIVE LOCATION: _____ FILE #: _____
PROCESSED BY: _____
PHOTO #: _____ of _____
GPO 835 - 559

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: USI
SUBJECT: SV
LOCATION: DRAINAGE DITCH SOUTH of GYPSUM PILE (WEST PILE)
(D)
CITY: _____ COUNTY: _____ STATE: _____
DATE: _____ TIME: _____
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) _____
WITNESS: _____
CAMERA: _____
FILM TYPE: _____ ASA: _____ T:1/_____ f: _____
NEGATIVE LOCATION: _____ FILE #: _____
PROCESSED BY: _____
PHOTO #: _____ of _____

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: USI
SUBJECT: SV
LOCATION: Pit 11
(E)
CITY: _____ COUNTY: _____ STATE: _____
DATE: _____ TIME: _____
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) _____
WITNESS: _____
CAMERA: _____
FILM TYPE: _____ ASA: _____ T:1/_____ f: _____
NEGATIVE LOCATION: _____ FILE #: _____
PROCESSED BY: _____
PHOTO #: _____ of _____
See Back of Photo

GPO 835-559

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: USI
SUBJECT: SV
LOCATION: Deep Soil Boring - EAST SIDE of Fly Ash Area
(F)
CITY: _____ COUNTY: _____ STATE: _____
DATE: _____ TIME: _____
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) _____
WITNESS: _____
CAMERA: _____
FILM TYPE: _____ ASA: _____ T:1/_____ f: _____
NEGATIVE LOCATION: _____ FILE #: _____
PROCESSED BY: _____
PHOTO #: _____ of _____

GPO 835-559

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

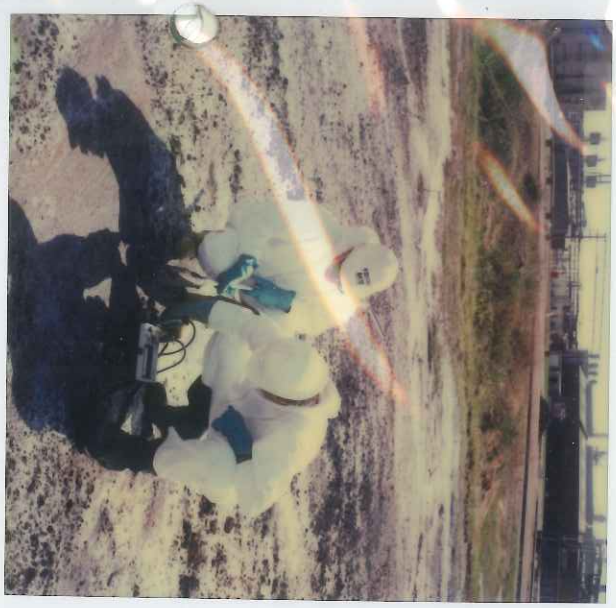
PROJECT/CASE NO: USI
SUBJECT: SV
LOCATION: South Side of N. Fly Ash Area
(F)
CITY: _____ COUNTY: _____ STATE: _____
DATE: _____ TIME: _____
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) _____
WITNESS: _____
CAMERA: _____
FILM TYPE: _____ ASA: _____ T:1/_____ f: _____
NEGATIVE LOCATION: _____ FILE #: _____
PROCESSED BY: _____
PHOTO #: _____ of _____

GPO 835-559

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: USI
SUBJECT: SV
LOCATION: S. Flyash Disp.
CITY: _____ COUNTY: _____ STATE: _____
DATE: _____ TIME: _____
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) _____
WITNESS: _____
CAMERA: _____
FILM TYPE: _____ ASA: _____ T:1/_____ f: _____
NEGATIVE LOCATION: _____ FILE #: _____
PROCESSED BY: _____
PHOTO #: _____ of _____

GPO 835 - 559



OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: USI
SUBJECT: SV
LOCATION: SNAKE RIVER
CITY: _____ COUNTY: _____ STATE: _____
DATE: _____ TIME: _____
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) _____
WITNESS: _____
CAMERA: _____
FILM TYPE: _____ ASA: _____ T:1/_____ f: _____
NEGATIVE LOCATION: _____ FILE #: _____
PROCESSED BY: _____
PHOTO #: _____ of _____

GPO 835 - 559

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: USI
SUBJECT: SV
LOCATION: BACKGROUND SAMPLE
CITY: _____ COUNTY: _____ STATE: _____
DATE: _____ TIME: _____
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) _____
WITNESS: _____
CAMERA: _____
FILM TYPE: _____ ASA: _____ T:1/_____ f: _____
NEGATIVE LOCATION: _____ FILE #: _____
PROCESSED BY: _____
PHOTO #: _____ of _____

GPO 835 - 559

MEMO: TO RCRA Il Permitting File
FROM: Kevin Moss
RE: USI VSI
DATE: 4-1-88

A VSI was performed at U. S. Industrial Chemicals (USI) on 3-22-88. Chuck Wilk, U.S. EPA, accompanied me on the trip. Representing USI were: G. Max Miller, Technical Manager, Kurt R. Kessler, Chemical Engineer, and Rudy Kalmar, Asst. Engineering Manager. We began by meeting in a conference room at the USI administration building. I explained how this site visit pertained to the HSWA of 1984 and how this related to the USI site. USI has never submitted the SWMU certification, so I verbally asked them to address it. No additional units were identified by the USI representatives. An area east of Cabot Corp., owned by USI, was inadvertently identified by USI as an old acid pit area (Telephone calls to USI after the VSI, to confirm the existence of this area revealed the mistake). No records exist which mention this area as an old acid pit area, so I am inclined to believe that this identification was a mistake. We briefly discussed the facility and the SWMU areas I wanted to visit. We then proceeded to the facility grounds.

Off site DRAINAGE

Off site drainage occurs in the southwest portion of the facility. USI pointed out that only a small portion of facility runoff actually drains off site. They further pointed out the barriers which were constructed nearby to divert the rest of the facility runoff to the WWTP. The runoff which drains off site originates from what appears to be an old storage area, and a production area which is no longer in operation. The possibility exists that water from the on site drainage areas could backup through a culvert connecting the on site to the off site drainage during large precipitation events. During the VSI the on site drainage was running high while the off site was very shallow, so it appears the two drainage areas are successfully separated.

On site DRAINAGE

The on site drainage at the facility consists of earthen drainage ditches which are routed to the WWTP. USI stated that only facility runoff is carried through these channel and no production waste is carried. However, an area called pit 11(discussed below) is used to store waste water diverted to this pit from the WWTP during high flow events. USI stated that some pretreatment has occurred before the water is sent to the pit. This area is then drained, via the earthen ditches, to the WWTP. The actual routing of the waters, and the type and amount of treatment done, were unclear. Clarification of this will be pursued at the expected sampling visit.

SNAKE RIVER SURFACE IMPOUNDMENT

This area was used by USI as a neutralization pond for pH extreme waste water streams before sending it to the WWTP. USI eventually closed this pond under IEPA authority. The waste stream now by-passes the impoundment via an underground pipe connecting concrete tanks at each end of the impoundment. It was, however, pointed out to me that the tanks have overflow grates which would allow waste water to again enter the impoundment during high flow events. Where and how facility runoff and production waste would commingle is not clear. This also will be pursued during the proposed sampling visit. The pond itself had standing water in the northern portion only. The water did, however, contain an oily substance and polyethylene pellets.

WWTP SLUDGE LAGOONS

USI stated that the USEPA had them sample these lagoons for hazardous constituents back around 1980-81. I found no evidence of this in my preliminary review of the site. The lagoons are non-descript. There are several of them, but we actually walked by only a couple of them. This is a very large area and the aerial photo did not show anything out of the ordinary.

SOUTH ACID PIT AREAS

Prior to 1971 USI kept spent sulfuric acid in several pits located in three main areas of the facility. These pits were then, reportedly, filled with solvents, catalysts, insulation, and unknowns (information supplied by USI) and are now covered by fly ash and minor amounts of construction debris. There are two areas toward the south/south east area of the facility. The west one of the two has a large coal pile atop this area and is also built up with other materials. The eastern of the two is covered with fly ash and some stone and gravel. I estimate that at a minimum 10 feet of materials overly the surrounding grade.

NORTH ACID PIT AREA

Just south of the gypsum piles is a large fly ash area which used to be an old acid pit area (see above for acid pit details). This area is covered with what is at least 20-30 feet of fly ash. There are drainage areas on the east and south sides. These would appear to be the best locations for any future sampling.

GYPSUM PILES

At the north end of the facility are two very large gypsum piles. The gypsum was produced as a by-product of phosphoric acid production. IEPA reports state that the leachate from these piles is very low in pH, ~2. USI stated that at one time this was true, but that is has moderated to a more neutral pH now. A black stain, at the west wall of the west pile, was noted in driving around the facility prior to the VSI. USI said that this area is fly ash which was used to build up a low area in the containment wall. Aerial photos show unidentified material being dumped atop the west

pile. Evidence of this was seen during the VSI. USI said this material is finely ground polyethylene pellets mixed with a surfactant. The material is not sent to the WWTP because the surfactant material would foam and would violate the NPDES permit. USI had also at one time dumped WWTP sludge here also. Leachate is also pumped to the top of the gypsum piles to promote evaporation. This also eliminates material which would otherwise be deep well injected. However, besides the pellet and surfactant material nothing appeared out of the ordinary. We then walked to the top the east gypsum pile. This is the highest elevation in the area(not just the facility). From this vantage point nothing appeared out of the ordinary. The leachate collection ditches were non-descript.

PIT 11

A pond identified as Pit 11 is located just west of the north fly ash/acid pit area. This pond is used as temporary storage for waste water diverted from the WWTP during high flow event. USI said that some pre-treatment had occurred before the water entered the pond. An oily film and polyethylene pellets were noted in the north end of the pond.

OLD SULFURIC ACID PRODUCTION AREA

We drove past this area on the way back to the administrative building. The area is definitely not active and appeared relatively well kept. The aerial photos did not identify any staining or standing water in this area. USI indicated that they have received inquiries about the selling equipment from this area, but that they were not sure if they would or not.

This concluded the field potion of the VSI. I told USI that it was possible that we would like to sample as part of our RCRA Facility Investigation. They requested that I supply them with enough notice that their lawyer could review the request. I told them that this was no problem, and that I would send them an official letter, requesting to sample, at least two weeks ahead of time.

USI inquired about what, if any, environmental standards they would need to comply with to burn some old railroad ties which have accumulated at the facility. I told them I would check and get back to them on this.

This concluded the VSI.

DATE: Feb 15, 1990
SUBJECT: Preliminary Review - USI Tuscola
TO: RCRA Files
FROM: Kevin J. Moss

GENERAL FACILITY DESCRIPTION

U.S. Industrial and Chemical (USI) is a hydrocarbon processing plant located in Tuscola, Illinois. USI is a division of National Distillers and Chemical Corporation. The facility is located 3 miles west of US 45 on US 36, about three miles west of the town of Tuscola, Il. USI has been in operation at this site since 1953. They employee about 750 people and operate three shifts seven days a week. The facility occupies 776 acres. The Cabot Corporation borders the facility on the southeast with the Kaskaskia River forming a portion of it's western boundary. The surrounding area is agricultural. Population within one mile is approximately 338, about 630 within two miles, and 1027 within three miles. The Kaskaskia River is USI's and Tuscola's main water supply.

USI is no longer seeking a permit as they have closed all their RCRA units. However, there are several areas which need to be addressed under the HSWA authority for past SWMU activity. Of primary concern are several old acid pits which were converted to landfills, and two gypsum piles, and associated ditches and holding ponds, from the past production of phosphonic acid.

REGULATORY STATUS

USI has requested that their Part B permit application be withdrawn as they have now closed all their RCRA units. The IEPA has not acted on this withdrawal request as yet. USI has repeatedly refused to submit the Certification Regarding Continuing Releases from SWMUs. Regardless, there appear to be several SWMUs which need to be addressed under HSWA authority.

USI is presently operating under three permits. 1)NPDES, for the WWTP discharge. 2) UIC, for the injection of low pH waste/leachate from the holding ponds and ditches surrounding the gypsum piles. 3) And one for fresh water wells at Bondville, Il.

USI PRODUCTS

Liquid Petroleum Gas; propane, butanes, and pentane, are the facilities main products. Ethylene, ethyl alcohol, ethers, and polyethylene are also produced. Sulfuric and Phosphorus acids were produced between 1953 and 1971.

USI WASTES

In the original Part A, listed wastes included: F001, U210, D002, D001, D007, P120, and U213. Wastes U213, U210, P120, and D007 were later deleted from the list. Of the wastes remaining on the Part A,

•An F001(90%) storage area was closed 4/86. The F001, a spent degreasing solvent, is a mixture of perchloroethylene, methylene chloride, and 1,1,1-trichloroethane. About 8 barrels of this waste are produced a year, although none has been observed on-site. Wastes containing PCB's and a PCB transformer have also been identified in this storage area.

•A D001 thermal treatment unit(T04), had closure approved on 3/86. This unit was used for the incineration of waste catalysts, a mixture of organic peroxide and kerosene from the polyethylene unit.

•The D002 "snake river" surface impoundment (S04), a neutralization pit for acidic wastes, was closed 7/85. Sulfate and chromium are also possible pit constituents.

Additional WASTE INFO

•The RD for this site list acids and metals as the main wastes. With the wastes characterized as toxic, corrosive, persistent, soluble, and reactive. The waste quantity was estimated at 8.85E6. More specifically, the wastes are described as solids and liquids; sludge, oily waste, and solvents, with constituents of sulfur, phosphorus, and chromium.

In USI's "Notification of Hazardous Waste Site" submittal they identified their wastes as organics, inorganics, solvents, acids, and unknowns. Dates of waste handling is listed from 1953 to mid-1970's. The waste disposal sites were described as landfills/impoundments with suspected releases. More specifically, H2SO4, Flyash(non-hazardous), waste insulation, catalysts, misc solvents, and sbg were possibly disposed of in the old acid pits /landfills. These pits are now covered with flyash(see below).

Leachate from the gypsum piles (see below)is low in ph, just above 2, and high in fluorides. Phosphoric acid and sodium hydroxide are discharged into a ditch near the gypsum piles from the ion exchange regeneration system prior to deep well injection.

Various waste oils are saved and burned in the plants boiler. IEPA had expressed concern over the determination of which waste oils were being considered non-hazardous. I assume this problem has been resolved. 10 vessels are used to collect the used oil and process waste.

A 55 gallon drum is used to collect spent halogenated solvents.

USI also generates small quantities of non-regulated laboratory wastes; including acids, caustics, and alcohols. The acidic wastes and various other lab reagents are diluted and washed down the drain. The alcohols are recycled. Lab solvents (non-halogenated) are reclaimed for fuel value and burned in the plant boiler. Minor amounts of lab caustics, acids, and spent solvents are sent to the WWTP via the chemical sewer.

SWMUs

As previously mentioned, USI closed three units which would

remainder as RCRA regulated.

c) The snake river surface impoundment (SI04,S002) was clean closed in 1985. Low pH water were neutralized in this pond prior to being sent to the WWTP. Entrance and exit banks presently connect a pipe across the impoundment. The IEPA noted several problems/irregularities with the groundwater system monitoring this impoundment. However, following the clean closure of the impoundment these irregularities/problems were, I assume, never addressed. The impoundment was originally listed for reduction of chromates as well. Sulfate was also analyzed for during closure.

d) A thermal treatment unit (T04,D001) was closed in 1986. This unit was used to incinerate organic peroxide (see above).

e) An F001 drum storage area (S01) was closed in 1985. The Orlando building is used for drum storage. Besides F001, PCB waste and a PCB transformer has been stored there.

Additional areas which should be reviewed for past waste disposal activities.

*10 pits were used to store 85-90% sulfuric acid solution between about 1960 and 1971. 9 of the 10 pits have since been closed and covered. The pits were converted to landfills with the addition of slightly alkaline flyash to neutralize the acids. However, insulation, catalysts, misc solvents, and PCB were possibly placed into these pits as well. USI notified the EPA about the possible disposal of these wastes in their Notification of Hazardous Waste Site submittal. In this submittal USI also acknowledged they suspect a release from these pits. The CERCLA file estimates about 1.7 million C.Y. of solids, powder, fines, and liquids were disposed in these pits. They characterize the wastes as toxic, corrosive, persistent, soluble, and reactive.

Pit 10, which may be one of the acid holding pits, is interconnected with the gypsum holding pond. An IEPA report noted that this pond was devoid of algal growth and has a dark brown bottom sediment. The pond is presently being used as a fly ash disposal area.

There is also an area called pit 11 [redacted]. It is unknown if this used to be a sulfuric acid holding pit. The pond is being used to store wastewater diverted from the WWTP until the wastewater can be treated.

*There are two gypsum piles, totaling 57 acres, from the 14 year production (1957-71) of phosphoric acid. While the Gypsum is non-hazardous, there is documentation that additional waste was placed atop the piles. Sludge from the WWTP have also been placed on top of one of the gypsum piles. This was a one time occurrence according to USI officials. Low pH waters/leachate is pumped to the top of the gypsum piles in the summer to promote evaporation. This way not as much liquid needs to go deep well injection (see below).

Surrounding the gypsum piles are several ditches and ponds,

totaling approximately 50 acres, which serve as a leachate collection system. The leachate has a low pH and is high in fluoridesy constituents uncharacteristic of gypsum. The pH in the ditches and ponds is borderline characteristic corrosive with the pH hovering just above 2. Field measurements have indicated pH as low as 1, however, laboratory pH has been above 2. There is also an adjoining ditch used for the discharge from an ion-exchange regeneration system containing a mixture of phosphonic acid and sodium hydroxide.

Attachments 1 and 2 show the location of the pits/landfills and gypsum piles.

*There are several flyash/landfill disposal areas. Most of these areas are identified as converted sulfuric acid pits (see above). The aerial photos also identify several previously unidentified disposal/landfill areas. It is unknown what wastes are disposed here.

*USI operated a UIC well. The well is used to inject acidic wastes. About 200-300 gallons per minute are injected. The liquid/leachate from the gypsum pile holding ponds/ditches is deep well injected. An organic/volatile scan was done of this waste by the IEPA. I do not have a record of the results of this scan. I will review this with the IEPA.

*Tanks: There are 18 vessels used to collect used oils and process wastes.

*Ion-exchange system - This system generates both acidic and caustic wastes. The acidic waste was previously sent to the snake river surface impoundment. Both waste streams are presently being sent to the WWTP. To clean the ion-exchange unit USI will periodically introduce a caustic to it. The waste generated from this cleaning procedure, containing phosphate and carbon, have been pumped atop the east gypsum piles(see above). USI does not send this waste to the WWTP because of an elevated phosphate level.

*WWTP/Sludge lagoons - Several sludge lagoon exist which are associated with the WWTP. To the best of my knowledge these lagoons have never been investigated.

*Romaine Flyash Disposal - The CERCLA file reported this fly ash Disposal area. I am unsure of the exact location of this pile. Reportedly this site was leased to USI in the mid-60s. The owner stated that only flyash was deposited and that soil was stockpiles for cover. The area is now in agricultural use. The state investigated this site(1980). They indicated that the inspection did not reveal any problems and that no hazard exists. If, in fact, this area was used solely for fly ash disposal than no problem should exists. However, if it is determined that other constituents were disposed along with the flyash, as with the acid pits, then this area should be investigated further.

*It is suspected that previously unidentified SWMUs may exist.

GEOLOGY/GROUNDWATER

A groundwater study for this facility has been completed. Most of the technical reports and sampling information are on file with the IEPA. The regional groundwater is reported to be of poor quality with no well defined aquifer. The aquifer is described as sand lenses within the glacial till clays. The water table is within a few feet of the surface. USI is located on a recharge area with the Kaskaskia river the discharge area. The site is relatively flat, with a slope of <3% to the W/SW. The groundwater flow is generally east-west. A groundwater divide exists on the facility; groundwater west of the divide flows to the Kaskaskia river, with the groundwater east of the divide flowing to the Embarass river.

The site is underlaid by approximately 100' of glacial till. The vertical permeability of the clay was determined to be in the 10-8 to 10-9 range, with the horizontal permeability in the 10-5 range. The groundwater monitoring system designed for the facility is not adequate to monitor ~~for~~ all the SWMUs on site. A total of ten wells exist on site, 4 for snake river and six others throughout the facility. It was reported that the IEPA wanted to sample a well near the gypsum piles but was refused access by USI. All sampling results, from all the wells, should be collected and reviewed.

Evidently there were several problems with the groundwater monitoring system. The IEPA reported repeated RCRA violations of the groundwater monitoring system, particularly in the monitoring of the snake river impoundment. Statistically significant changes in pH were noted. It was suspected that the upgradient well for the snake river impoundment was contaminated and should have been replaced. The upgradient well has a higher specific conductance and lower pH. It appears that pH, specific conductivity, TOC, and TOX were the only constituents tested for. However, once the snake river impoundment was closed, USI was no longer required to monitor the groundwater and the irregularities noted in the groundwater data were never addressed.

RECEPTOR RISK

The PA estimated that less than 50 people would be affected by groundwater contamination and less than 100 by surface water contamination. The nearest population and offsite building is within 1/8 mile. 166 building exist within 2 miles. The IEPA considers the population potentially affected from a release from the old acid pits to be low with consideration of groundwater and surface water routes. The closest, shallow, off-site water wells are approximately 1 mile north of the site.

RELEASES

No major uncontrolled releases are on file. A breach in the

snake river impoundment dike is on record. The dike was reported fixed. Any contamination I assumed was addressed at that time or during closure. Runoff from the gypsum piles is also on file. While this liquid is borderline characteristic corrosive the gypsum ponds and associated ditches and holding pond are not regulated, therefore no action was taken.

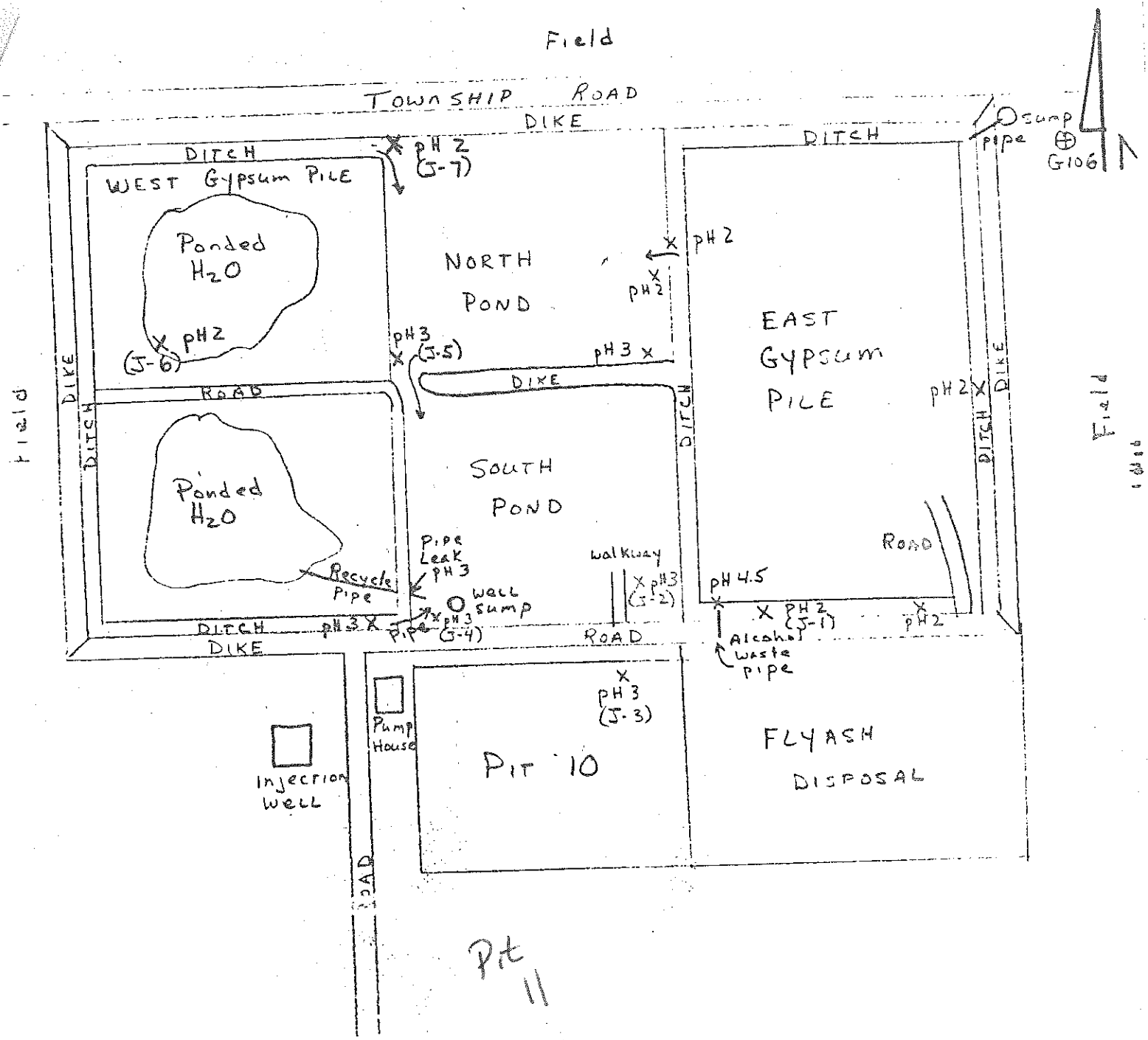
PUBLIC COMPLAINTS

On 4/19/85 Mark Wesch contacted the IEPA and alleged that USI was responsible for sludge piles and flyash found on his property. It is unknown what, if any, action was taken.

RECOMMENDATIONS: A VSI should be conducted for this facility. Present information would suggest that a sampling visit also take place. All available groundwater analytical results should be collected and reviewed.

DOUGLAS Co. LPC 04130502 DATE: August 27 1984

TUSCOLA / USI TIME: 9:00 A.M - 2:00 P



X- Sample Locations

NOT TO SCALE

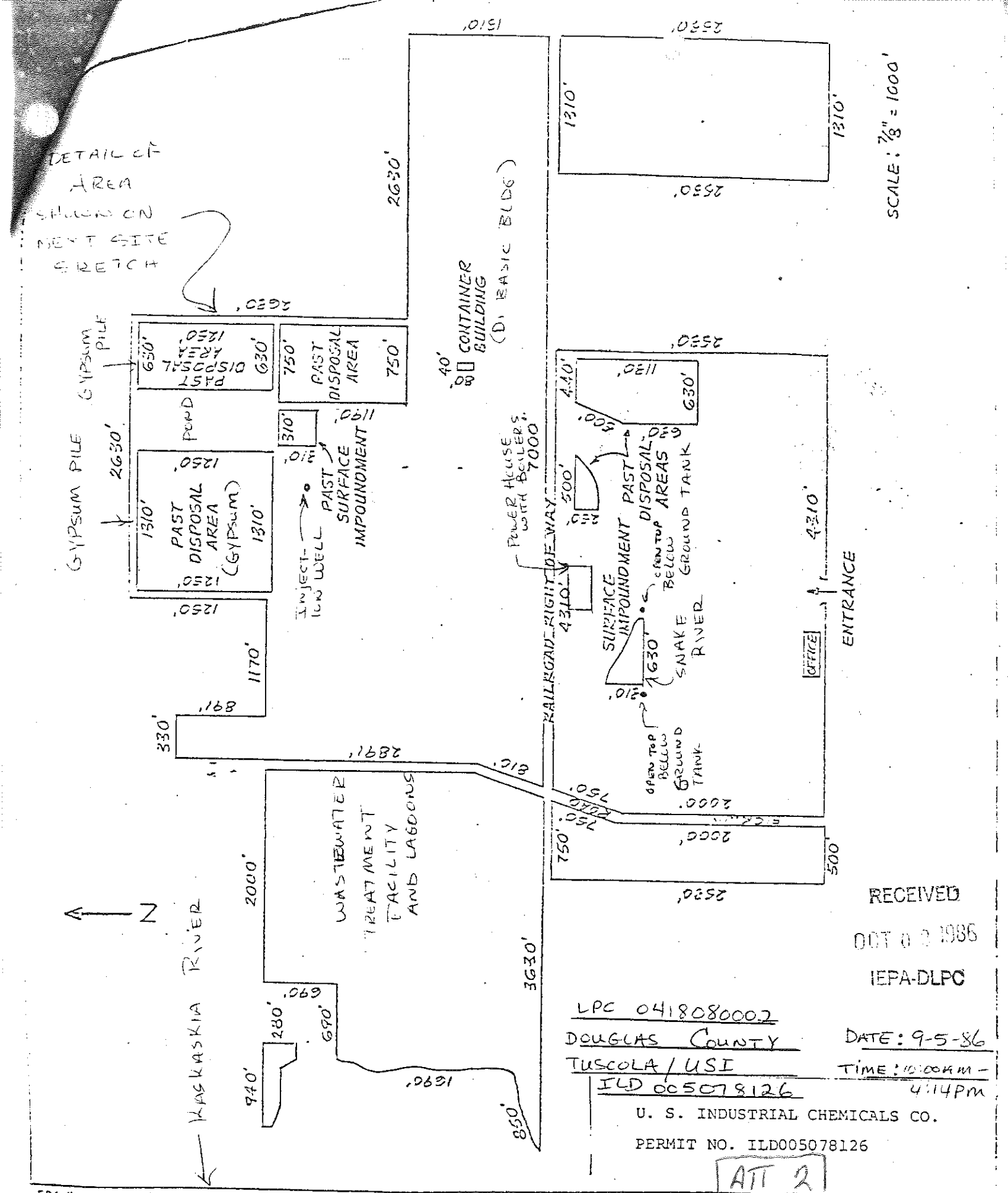
RECEIVED
SEP 04 1984
IEPA-DLPC

PC 67 11/80

(4)

ATT 1

7



RECEIVED
OCT 0 2 1986
IEPA-DLPC

LPC 0418080002
DOUGLAS COUNTY
TUSCOLA / USI
ILD 005078126

DATE: 9-5-86
TIME: 10:00AM - 4:14PM

U. S. INDUSTRIAL CHEMICALS CO.
PERMIT NO. ILD005078126

ATT 2

EPA Form 2510-3 (6-80)

8

OCT 0 2 1986

Douglas Co General Superfund

FOS 8203-02

IL-022-06

ecology and environment, inc.
223 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60606, TEL. 312-663-9415
International Specialists in the Environmental Sciences

4

DATE: January 19, 1983

TO: File/USEPA Region V

FROM: Paul D. Shea

SUBJECT: Preliminary Assessment
Illinois/TDD#R5-8212-01A-022
Tuscola/U. S. Industrial Chemical Company
ILD005078126

Attached is EPA's Preliminary Assessment Form 2070-12 for the above referenced site.

Primary information was gathered from the following source(s):

1. EPA Form T2070-2 (10-79), Ecology and Environment Files
2. IEPA Files (Mr. Robert Munger - 217/782-6760)
3. HRS Users Manual

Information indicates the following responsible parties should be listed. They are listed here because of space limitations:

1. None
2.
3.

Presently, data gaps or no verification exists in the following key area(s):

1. Waste quantity
2. Groundwater/surface water contamination
3. Air emissions

A review of the available data indicates that additional information will be necessary to assess the impact(s) on:

1. Waste quantity
2. Groundwater/surface water
3. Air emissions
4.
5.

Suggested methods/sources for obtaining additonal information are:

1. Water/air sampling and monitoring
2. On site inspection
3. Off site inspection

Notice of an apparent need for emergency action was transmitted to N/A on N/A by N/A.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION
01 STATE: IL | 02 SITE NUMBER: D005078126

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site): U.S. INDUSTRIAL CHEMICAL CO.

02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER: NW. SEC. 31, T16N, R8E 3 MILES WEST OF US 45 ON US 36

03 CITY: TUSCOLA

04 STATE: IL | 05 ZIP CODE: 61953 | 06 COUNTY: DOUGLAS | 07 COUNTY CODE: 041 | 08 CONG DIST: 22

09 COORDINATES: LATITUDE 39° 47' 31.0" | LONGITUDE 88° 20' 56.3"

TOPO MAP: TUSCOLA SE

10 DIRECTIONS TO SITE (Starting from nearest public road):
TAKE (36) WEST OUT OF TUSCOLA AND GO TO SECOND RIGHT. TURN RIGHT AND SITE IS ON RIGHT SIDE OF ROAD ABOUT A MILE UP. (NORTH)

III. RESPONSIBLE PARTIES

01 OWNER (If known): U.S. INDUSTRIAL CHEM. CO.

02 STREET (Business, mailing, residential): P.O. Box 218

03 CITY: TUSCOLA

04 STATE: IL | 05 ZIP CODE: 61953 | 06 TELEPHONE NUMBER: (217) 253-3311

07 OPERATOR (If known and different from owner): MR. BILL CALVERT SUPERINTENDENT OF SECTION

08 STREET (Business, mailing, residential): P.O. BOX 218

09 CITY: TUSCOLA

10 STATE: IL | 11 ZIP CODE: 61953 | 12 TELEPHONE NUMBER: (217) 253-3311

13 TYPE OF OWNERSHIP (Check one)
X A. PRIVATE ☐ B. FEDERAL: _____ (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)
X A. RCRA 3001 DATE RECEIVED: 8/18/80 (MONTH DAY YEAR) X B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED 6/8/81 (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
X YES DATE 4/28/78 (MONTH DAY YEAR) 8/28/80
☐ NO

BY (Check all that apply)
☐ A. EPA ☐ B. EPA CONTRACTOR X C. STATE ☐ D. OTHER CONTRACTOR
X E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ (Specify)
CONTRACTOR NAME(S): _____

02 SITE STATUS (Check one)
X A. ACTIVE ☐ B. INACTIVE ☐ C. UNKNOWN

03 YEARS OF OPERATION: 1970 (BEGINNING YEAR) | PRESENT (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
ACIDS (TOXIC, CORROSIVE)
METALS (TOXIC, PERSISTENT)

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
RUNOFF TO SURFACE WATER (ENVIRONMENT & POPULATION)
GROUNDWATER CONTAMINATION (POPULATION)

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)
☐ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) ☐ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER
MR. ROBERT MUNGER	IEPA (SPRINGFIELD)	(217) 782-6760

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
			( )	/ / (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION
01 STATE: IL | 02 SITE NUMBER: D005078126

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)
- [X] A SOLID
- [ ] B POWDER, FINES
- [ ] C SLUDGE
- [ ] D OTHER (Specify)
- [ ] E SLURRY
- [X] F LIQUID
- [ ] G GAS

02 WASTE QUANTITY AT SITE
(Measures of waste quantities must be independent)
TONS: ____
CUBIC YARDS: 8.85×10^6 (ESTIMATED)
NO. OF DRUMS: ____

03 WASTE CHARACTERISTICS (Check all that apply)
- [X] A TOXIC
- [X] B CORROSIVE
- [ ] C RADIOACTIVE
- [X] D PERSISTENT
- [X] E SOLUBLE
- [ ] F INFECTIOUS
- [ ] G FLAMMABLE
- [ ] H IGNITABLE
- [ ] I HIGHLY VOLATILE
- [ ] J EXPLOSIVE
- [X] K REACTIVE
- [ ] L INCOMPATIBLE
- [ ] M NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			= { 1.77×10^7 GA / 12 yrs
OLW	OILY WASTE			{ 3.54×10^7 DR / 12 yrs
SOL	SOLVENTS			{ 8.85×10^6 yd^3 / 12 yrs
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS ✓	2.95×10^6	yd^3	SULFUR & PHOSPHORUS
ACD	ACIDS ✓	2.95×10^6	yd^3	
BAS	BASES			
MES	HEAVY METALS ✓	2.95×10^6	yd^3	CHROMIUM

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

- EPA FILES (MR. ROBERT MUNGER)
- EPA FORM T2070-2 (10-79)
- E & E FILES (TDD # F5 8005-03, F5 8011-04)
- HRS USERS MANUAL

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: IL | 02 SITE NUMBER: D005078126

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 380
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

INJECTION OF ACID WASTE INTO A CALCAREOUS GEOLOGICAL FORMATION POSES A POTENTIAL GROUNDWATER PROBLEM.

01 [X] B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 380
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

POSSIBLE HAZARD DUE TO SURFACE SPILL +/OR RUNOFF FROM GYPSUM PILE - KASKASKIA RIVER ≤ 1 MILE AWAY.

01 [X] C. CONTAMINATION OF AIR
03 POPULATION POTENTIALLY AFFECTED: 380
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

WIND EROSION OF GYPSUM PILE WHICH CAUSES PARTICLES TO BE SWEPT UP INTO AIR CURRENTS.

01 [ ] D. FIRE/EXPLOSIVE CONDITIONS
03 POPULATION POTENTIALLY AFFECTED: _____
02 [ ] OBSERVED (DATE: _____) [ ] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

01 [ ] E. DIRECT CONTACT
03 POPULATION POTENTIALLY AFFECTED: _____
02 [ ] OBSERVED (DATE: _____) [ ] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

01 [X] F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED: 80+ (Acres)
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

SOIL POTENTIALLY CONTAMINATED THROUGH A SURFACE SPILL WHILE INJECTING. PILES OF SOLID PRESENT

01 [X] G. DRINKING WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 380
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

WATER IN AQUIFER OF CONCERN POTENTIALLY AFFECTED THROUGH ACIDIC ACTION ON UNDERLYING SANDSTONE

01 [X] H. WORKER EXPOSURE/INJURY
03 WORKERS POTENTIALLY AFFECTED: ≤ 10
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

POSSIBLE HAZARD DUE TO SURFACE SPILL

01 [X] I. POPULATION EXPOSURE/INJURY
03 POPULATION POTENTIALLY AFFECTED: 380
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

POTENTIAL POPULATION EXPOSURE EITHER THROUGH CONTACT WITH POTENTIALLY CONTAMINATED GROUNDWATER OR SURFACE WATER

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: IL | 02 SITE NUMBER: D005078126

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 X J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) X POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
SPILLS, RUNOFF OF ACIDIC WASTE COULD POTENTIALLY POSE A THREAT TO FLORA OF SURROUNDING AREA.

01 X K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) X POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)
POTENTIALLY FAUNA AFFECTED BY DIRECT CONTACT WITH WASTE OR INDIRECTLY BY LOSS OF PLANT FOOD BASE DUE TO SPILL RUNOFF

01 X L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) X POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
DUE TO POSSIBLE SPILL & RUNOFF. FOOD CHAIN COULD EASILY BE AFFECTED

01 X M. UNSTABLE CONTAINMENT OF WASTES (Spills/runoff/standing liquids/leaking drums) — 02 ☐ OBSERVED (DATE: _____) X POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 380
04 NARRATIVE DESCRIPTION
POTENTIAL ACCIDENT PROBLEM WITH INJECTION → SPILLS, RUNOFF STANDING SOLIDS POSSIBLY WIND BLOWN.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: 380

IV. COMMENTS
DEEP WELL FACILITY WITH STORAGE POND, 80 ACRE GYPSUM PILE - T16N, R8E, SEC. 31

V. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)
EPA FORM T2070-2(10-79)
E & E FILES (AS DOCUMENTED ON PG. 2)
PERMITS THROUGH IEPA

EPA FORM 2070-12 (7-81)

Douglas Co. - S.F.

R

EPA Notification of Hazardous Waste Site

United States
Environmental Protection
Agency
Washington DC 20460

This initial notification information is required by Section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and must be mailed by June 9, 1981.

Please type or print in ink. If you need additional space, use separate sheets of paper. Indicate the letter of the item which applies. 810608

IL #253 ILS-000-001-335

A Person Required to Notify:
Enter the name and address of the person or organization required to notify.

Name: U. S. Industrial Chemicals Company
Street: P. O. Box 218
City: Tuscola State: IL Zip Code: 61953

B Site Location:
Enter the common name (if known) and actual location of the site.

ILD005078126

Name of Site: U. S. Industrial Chemicals Company
Street: 3 miles west of U.S. 45 on U.S. 36
City: Tuscola County: Douglas State: IL Zip Code: 61953

C Person to Contact:
Enter the name, title (if applicable), and business telephone number of the person to contact regarding information submitted on this form.

Name (Last, First and Title): Tadler, Thomas Plant Manager
Phone: 217-253-3311

D Dates of Waste Handling:
Enter the years that you estimate waste treatment, storage, or disposal began and ended at the site.

From (Year): 1953 To (Year): mid-1970's

E Waste Type: Choose the option you prefer to complete

Option I: Select general waste types and source categories. If you do not know the general waste types or sources, you are encouraged to describe the site in Item I—Description of Site.

General Type of Waste:
Place an X in the appropriate boxes. The categories listed overlap. Check each applicable category.

1. ☒ Organics
2. ☒ Inorganics
3. ☒ Solvents
4. ☐ Pesticides
5. ☐ Heavy metals
6. ☒ Acids
7. ☐ Bases
8. ☐ PCBs
9. ☐ Mixed Municipal Waste
10. ☒ Unknown
11. ☐ Other (Specify) _____

Source of Waste:
Place an X in the appropriate boxes.

1. ☐ Mining
2. ☐ Construction
3. ☐ Textiles
4. ☐ Fertilizer
5. ☐ Paper/Printing
6. ☐ Leather Tanning
7. ☐ Iron/Steel Foundry
8. ☒ Chemical, General
9. ☐ Plating/Polishing
10. ☐ Military/Ammunition
11. ☐ Electrical Conductors
12. ☐ Transformers
13. ☐ Utility Companies
14. ☐ Sanitary/Refuse
15. ☐ Photofinish
16. ☐ Lab/Hospital
17. ☐ Unknown
18. ☐ Other (Specify) _____

Option 2: This option is available to persons familiar with the Resource Conservation and Recovery Act (RCRA) Section 3001 regulations (40 CFR Part 261).

Specific Type of Waste:
EPA has assigned a four-digit number to each hazardous waste listed in the regulations under Section 3001 of RCRA. Enter the appropriate four-digit number in the boxes provided. A copy of the list of hazardous wastes and codes can be obtained by contacting the EPA Region serving the State in which the site is located.

000114 JUN-8 81

Form Approved
OMB No. 2000-0138
EPA Form 8900-1

JUN 12 1981

1)

Notification of Hazardous Waste Site **Side Two**

F Waste Quantity:

Place an X in the appropriate boxes to indicate the facility types found at the site.

In the "total facility waste amount" space give the estimated combined quantity (volume) of hazardous wastes at the site using cubic feet or gallons.

In the "total facility area" space, give the estimated area size which the facilities occupy using square feet or acres.

Facility Type

1. ☐ Piles
2. ☐ Land Treatment
3. ☒ Landfill
4. ☐ Tanks
5. ☒ Impoundment
6. ☐ Underground Injection
7. ☐ Drums, Above Ground
8. ☐ Drums, Below Ground
9. ☐ Other (Specify) _____

Total Facility Waste Amount

cubic feet Unknown

gallons _____

Total Facility Area

square feet _____

acres approximately 40

G Known, Suspected or Likely Releases to the Environment:

Place an X in the appropriate boxes to indicate any known, suspected, or likely releases of wastes to the environment.

☐ Known ☒ Suspected ☐ Likely ☐ None

Note: Items H and I are optional. Completing these items will assist EPA and State and local governments in locating and assessing hazardous waste sites. Although completing the items is not required, you are encouraged to do so.

H Sketch Map of Site Location: (Optional)

Sketch a map showing streets, highways, routes or other prominent landmarks near the site. Place an X on the map to indicate the site location. Draw an arrow showing the direction north. You may substitute a publishing map showing the site location.

See Attachment 1 - USGS Map of General Area

and

Attachment 2 - Facility Drawing

I Description of Site: (Optional)

Describe the history and present conditions of the site. Give directions to the site and describe any nearby wells, springs, lakes, or housing. Include such information as how waste was disposed and where the waste came from. Provide any other information or comments which may help describe the site conditions.

Available information indicates portions of this site were used to store an aqueous 25 to 50% spent sulfuric acid solution from approximately 1953 until the mid 1970's. During this period most of the acid solution was siphoned from various pit impoundments to a nearby lime neutralization facility where it was treated prior to discharge.

We have no known records to confirm that other materials were discarded into these pits; however, we suspect various substances (waste insulation, catalysts, miscellaneous solvents, etc.) may have been introduced prior to converting the impoundment areas to landfills with a slightly alkaline fly ash.

J Signature and Title:

The person or authorized representative (such as plant managers, superintendents, trustees or attorneys) of persons required to notify must sign the form and provide a mailing address (if different than address in item A). For other persons providing notification, the signature is optional. Check the boxes which best describe the relationship to the site of the person required to notify. If you are not required to notify check "Other".

Name T. J. Tadler

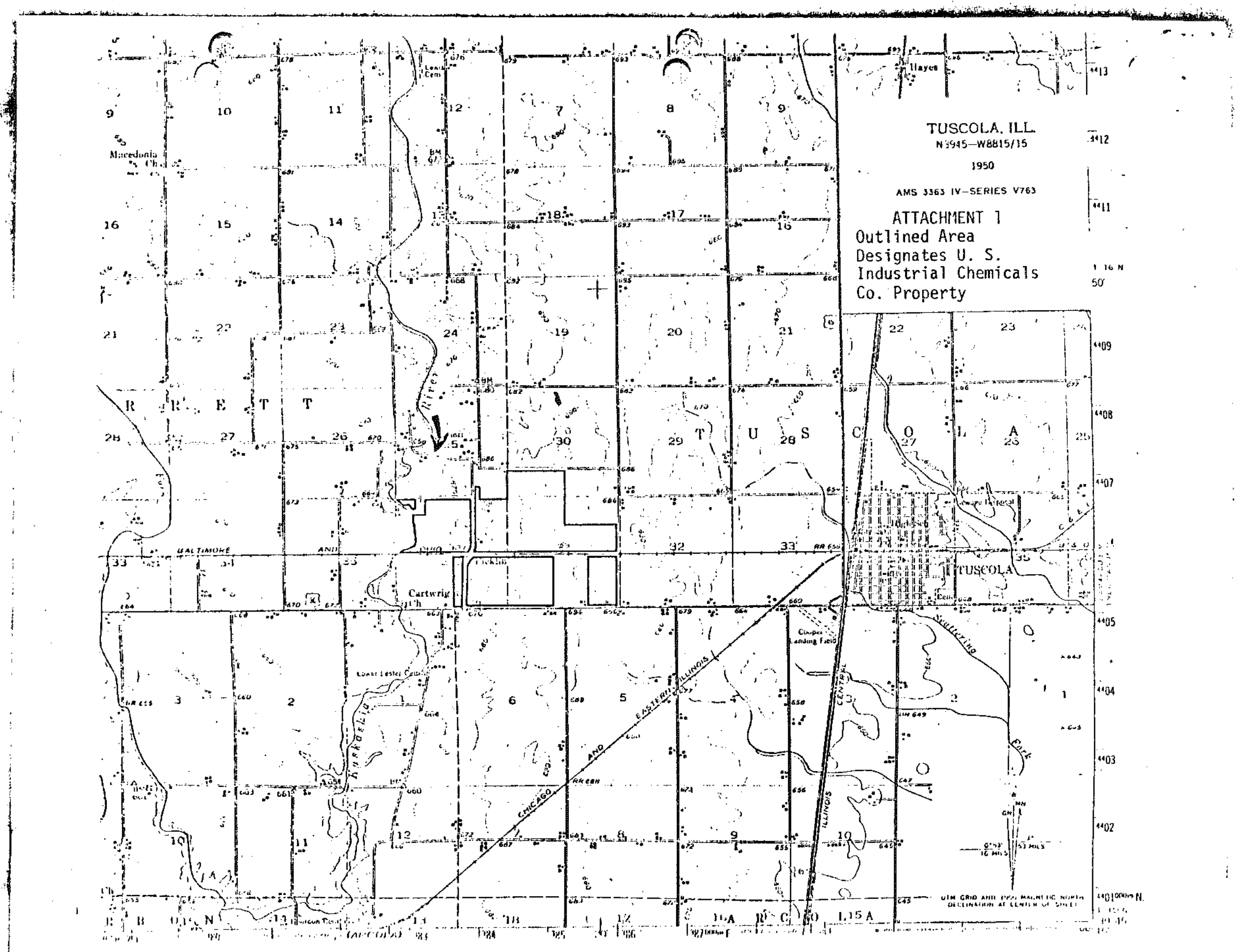
Street U. S. Industrial Chemicals Co, P. O. Box 218

City Tuscola State IL Zip Code 61953

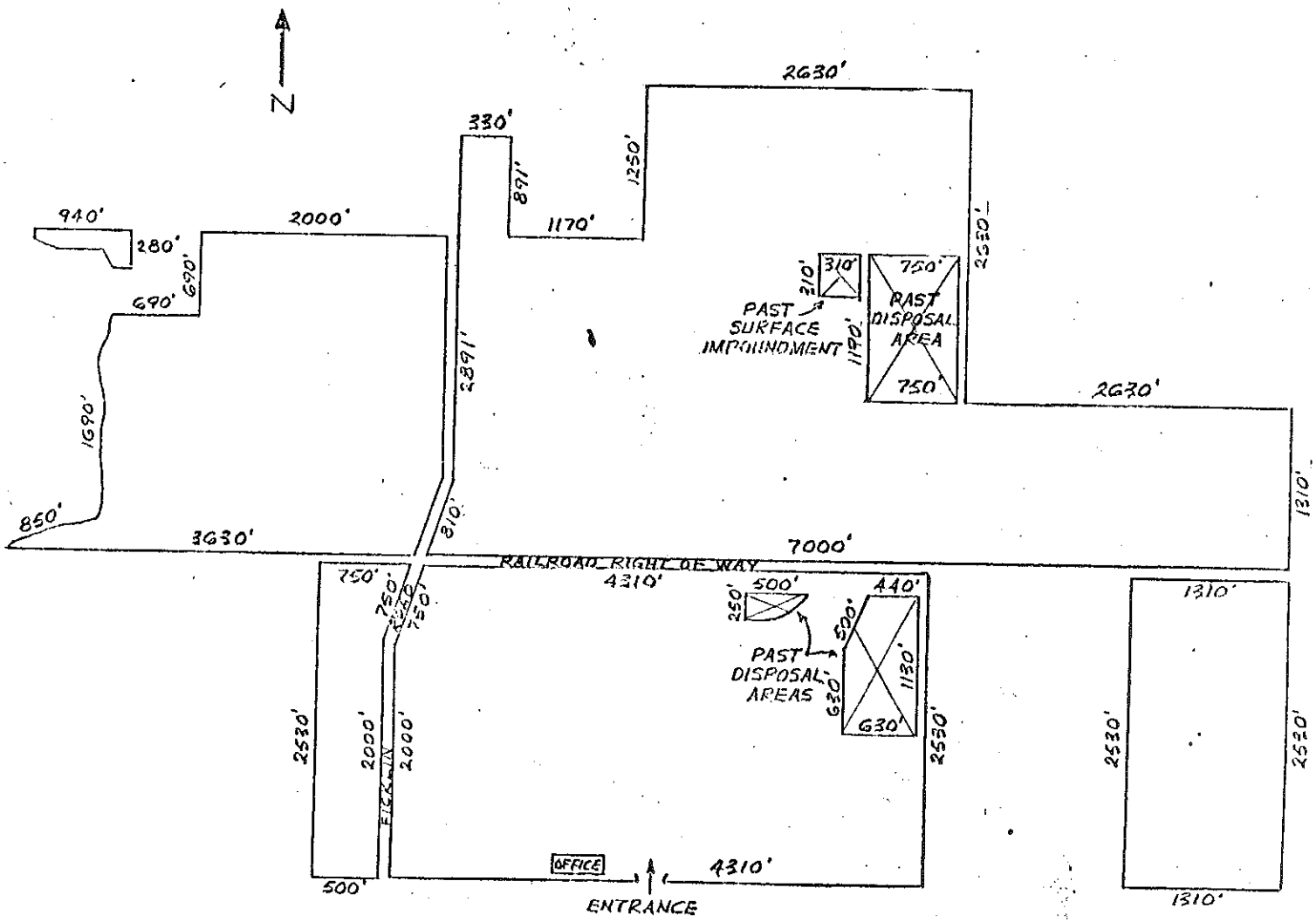
Signature Tadler Date 4/6/81

☒ Owner, Present
☐ Owner, Past
☐ Transporter
☐ Operator, Present
☐ Operator, Past
☐ Other

2)


TUSCOLA, ILL.
N3945—W8815/15
1950
AMS 3363 IV–SERIES V763
ATTACHMENT 1
Outlined Area
Designates U. S.
Industrial Chemicals
Co. Property
Macedonia Ch.
Hayes
BALTIMORE
AND
TUSCOLA
Cartwrig
Cooper Landing Field
CHICAGO
AND
EASTERN ILLINOIS
ILLINOIS
CENTRAL

ATTACHMENT 2
U. S. Industrial Chemicals Co.
Facility Drawing



SCALE: 7/8" = 1000'

U. S. INDUSTRIAL CHEMICALS CO.

Division of National Distillers and Chemical Corporation • P.O. Box 218, Tuscola, Illinois 61953 • (217) 253-3311

June 8, 1981

U. S. EPA Region 5
Sites Notification
Chicago, Illinois 60604

Dear Sir:

Attached is completed Form 8900-1, Notification of Hazardous Waste Site, for U. S. Industrial Chemicals Company at Tuscola, Illinois.

Very truly yours,

T. J. Tadler
Plant Manager

jw

Enclosure

JUN 12 1981

USI

FACILITY MANAGEMENT PLAN APPROVAL

Facility Name U.S. INDUSTRIAL CHEMICALS

EPA ID Number ILD 005 078 126

Facility Location TUSCOLA

Date Received from State 3/31/86

Date TPS Review 5/30/86

Date HWEB Review 7/9/86

Date ERRB Review N/A

The Facility Management Plan for this facility is

- ☐ Corrective Action Order
- ☐ Action involving ERRB
- ☐ RCRA permit
- ☒ Other RFA

Brief narrative USEPA RFA 9/87

CLOSING / POST-CLOSURE PERMIT LIKELY REQUIRED

Based on my review, this FMP is hereby approved

Signature _____ Date 7/9/86

(EPA TPS staff)

DATES ADDED 8-12-86

Attachment A

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

"A"

DATE: September 23, 1983

TO: Land Division File

FROM: David C. Jansen, DLPC/FOS-Central Region
DCJ

SUBJECT: LPC #04180802 - DOUGLAS COUNTY - TUSCOLA/U.S. INDUSTRIAL CHEMICALS
ILD #005078126

USI's original Part A application, dated November 17, 1980, included the following hazardous wastes and processes:

- F001 -- S01
- U210 -- S01
- P120 -- S01
- U013 -- S01
- D002 -- S04, T04
- D001 -- T04
- D007 -- S04, T04

In a September 1, 1983 letter to the USEPA, USI submitted a revised Part A application that included the following hazardous wastes and processes:

F001 -- S01
D001 -- T04

USI explains in this letter their rationale for deleting some of the hazardous wastes and processes.

Of particular note in their September 1, 1983 letter, is USI's deletion of S04--Surface Impoundment Storage, and T04--Surface Impoundment Treatment of corrosive waste-D002. This surface impoundment is referred to as "Snake River", because, in USI's words, it "has continuous flow like a river". USI maintains that Snake River is not a surface impoundment, but "a wide spot in a ditch or culvert", that is not designed for accumulation of liquid wastes, per the definition of surface impoundment in the 35 IL. A. C. 720.110.

I told Mr. Alsmeyer and Mr. Miller that it was IEPA's opinion that Snake River is a surface impoundment subject to Part 725 and the RCRA permitting requirements. This opinion was advanced to Mr. Miller, Mr. Alsmeyer, and Mr. John Rice, Corporate Attorney for USI, during an April 27, 1983, meeting with IEPA personnel. In forming this opinion, we considered the following: 1) Snake River has a continuous flow. Liquid wastes are thus always present in the impoundment; 2) One of the waste streams entering Snake River has, by USI's own admission, a pH of less than 2. This defines the waste as hazardous; 3) As an earthen impoundment for liquid wastes, Snake River has the potential to release contaminants to groundwater. This potential must be monitored; and 4) USI has other options for removing Snake River from regulation. They could attempt to

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raise the pH of its hazardous waste influent, or construct a pipeline to transport the corrosive waste directly to the collection sump at the west end of Snake River. This option would eliminate the potential for groundwater contamination from the hazardous waste stream.

It should also be noted that in its arguments for deleting Snake River, USI states that the effluent or discharge from Snake River does not have a hazardous waste characteristic. USI, however, does not test for pH at the Snake River discharge, but at the wastewater treatment plant. During a Subpart F inspection conducted on October 26, 1982, pH of the effluent at the collection sump was 1.99. Field pH meter tests conducted on the three influent waste streams showed pHs of 1.87, 1.79, and 6.72.

During today's inspection Snake River was covered with a thick, black mixture of oil and polyethylene pellets. The banks of the impoundment were also covered with this mixture above the water level. At the west end of the impoundment, small pools of orange to yellow liquids were observed on the pellet mixture. The influent waste streams were clear, but had a greenish tint when observed from a distance. The influent streams flowed circuitously through the thick oil-pellet mixture to the collection sump.

At the NE edge of Snake River, an erosion channel had cut into the dike of the impoundment. This erosion resulted from the drainage of wash water generated from the hosing down of trucks hauling flyash. A layer of oil and polyethylene pellets was observed along the length of the erosion channel for about 40 yards upstream of the cut in the dike. It was obvious that during high liquid waste levels, the waste is not confined to the impoundment. I brought this to Mr. Alsmeyer's attention, and he indicated that they would try to correct the problem. This breach was not observed recorded in the impoundment's inspection logs.

I asked Mr. Alsmeyer if he had determined if the pellet mixture was hazardous. He said he had not performed any tests, but agreed to conduct initial analyses to determine total metal content. E.P. Toxicity testing will be guided by the results of the preliminary analyses. A hazardous waste determination must be made for solid wastes pursuant to the 35 IL. A. C. 722.111.

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The other aspects of USI's Part A revision appear to accurately reflect activities currently conducted at the site. These aspects are: 1) Deletion of U013; 2) Deletion of U210; 3) Deletion of P120; 4) Revision of Estimate of Waste Generation --D001; 5) Deletion of D007; and 6) Deletion of T04. The deletion of T04 appears correct only in the sense that T02--Surface Impoundment Treatment is a more accurate description of the process involved.

Also observed during today's inspection was USI's barrel storage area. Five barrels of spent degreasing solvent--a mixture of perchloroethylene, methylene chloride, and 1,1,1-trichloroethane--were in storage in the vacant Dibasic building located at the far NE corner of the plant. Five drums of PCB wastes and a PCB transformer were also stored in this building.

Three process flares are utilized to burn a mixture of organic peroxides and kerosene in a process described as T04-thermal treatment. The flares were utilized to burn hazardous waste once in 1983 to date, six times in 1982, and five times in 1981. Normally, the flares are used routinely to burn off natural gas. Inspections of the stack plumes are conducted hourly during hazardous waste burns, per 725.477(b). Steady state conditions are determined by the height of the flame.

Also generated at USI, but not currently subject to regulation, are waste laboratory solvents, including alcohols, acetone, ether, and benzene. Acidic wastes and various other waste lab reagents generated in the laboratory are diluted and poured down the drain. Alcohols are recycled within the plant. The lab solvents, which are all non-halogenated, are reclaimed for fuel value by burning in the plant boilers. None of the aforementioned laboratory wastes are stored for more than 90 days before disposal. Lab solvent wastes are stored in a sealed dumpster parked just outside the laboratory. The solvent recycling is exempt under 721.106(b) and 721.102(c)(2). Mr. Alsmeyer indicated he would provide me with more data on this waste.

Also burned in USI's boilers are various waste oils generated from plant operations. The oils are stored in up to five storage tanks. Mr. Alsmeyer indicated that the oils were not contaminated with solvents or heavy metals.

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We discussed at length the "past disposal areas" described in USI's Part A application (see Attachment AA). Areas A and B are very large gypsum piles. Waste gypsum was generated as a by-product from the operation of a wet process phosphoric acid plant. They gypsum piles cover 57 acres, and represent a 14 year accumulation from about 1957 to 1971. Ditches around the perimeter of the gypsum piles channel leachate and runoff from the piles into a 20 acre holding pond. The leachate is low in pH and high in fluorides. Also discharged into one of the ditches is an aqueous waste stream generated from an ion-exchange regeneration system in USI's alcohol operation. This waste stream is a mixture of phosphoric acid and sodium hydroxide. Waste stored in the holding pond is injected into the deep well.

Interconnected with the holding pond is a surface impoundment known as Pit 10 (see Area C). As observed from its north end, Pit 10 appeared devoid of algal growth, and had a dark brown bottom sediment. Mr. Alsmeyer said initially that Pit 10 was used to store sulfuric acid wastes, as were 9 other pits or ponds. Mr. Alsmeyer then stated Pit 10 may have never been used for acid waste storage.

Immediately south of Pit 10 is Pit 11. This pond is used to store wastewater diverted from the wastewater treatment plant until the wastewater can be treated. Water levels in this pond are kept low to maintain reserve capacity when not in use.

Area D is a flyash disposal area currently in use. Mr. Alsmeyer stated that this area was the former location of Pits #7, #8, and #9. Sulfuric acid wastes were stored in these pits.

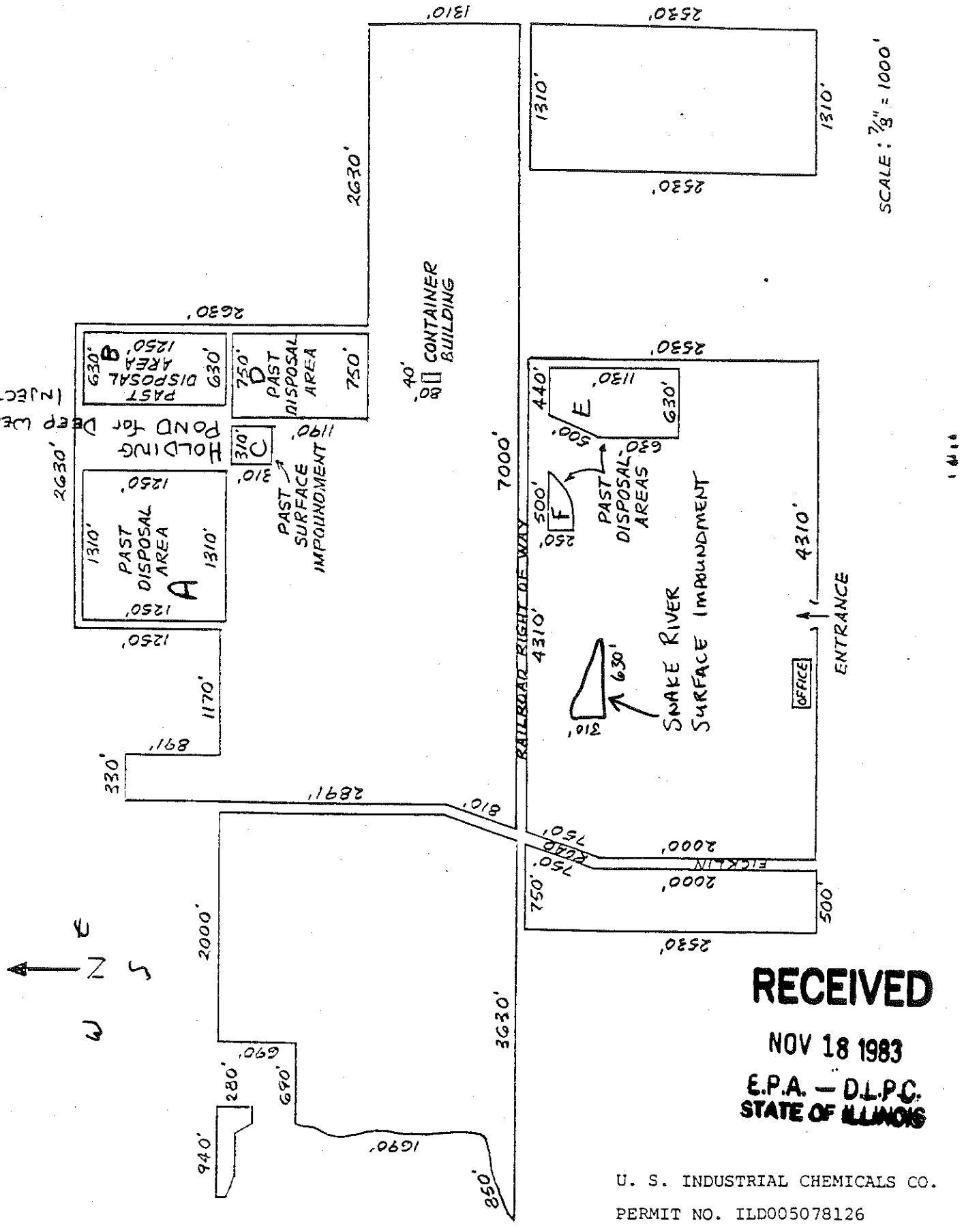
Areas E and F are old acid pits that were filled in with flyash.

In the past, USI injected into their deep well mercury wastes generated from their laboratory. This disposal was stopped in the 1970s, and a mercury recycling program was initiated. Because deep well injection is exempt from RCRA regulation pursuant to 725.101(c)(2), it appears that the past disposal of mercury wastes is exempt from the notification requirements of Superfund Section 103(c). A copy of USI's 103(c) notification was not obtained during the inspection.

DCJ/cp
Attachments
cc: DLPC/FOS, Central Region
R. Stone/USEPA, Region V

FACILITY DRAWING *(see page 4)*

ATTACHMENT AA



U. S. INDUSTRIAL CHEMICALS CO.

PERMIT NO. ILD005078126

Division File

Illinois Environmental Protection Agency · 2200 Churchill Road, Springfield, IL 62706

217/782-6761

Refer to: 04180802 -- Douglas County
Tuscola/U.S. Industrial Chemicals Company
Subpart F Groundwater Monitoring

November 18, 1983

U.S. Industrial Chemicals Company
P. O. Box 281
Tuscola, Illinois 61953

Attention: Mr. T. J. Tadler
Plant Manager

Dear Mr. Tadler:

This letter is to inform you that the above facility is in violation of Title 35, Illinois Administrative Code, Part 725, Subpart F, Groundwater Monitoring. The following violations have been identified: Section 725.191, Section 725.192, Section 725.193(d)(2), Section 725.193(d)(3) and Section 725.193(d)(4).

A discussion of these violations as well as those listed in the Agency's October 11, 1983 correspondence follows.

Item 1

On March 19, 1982, the Illinois EPA (Agency) inspected U.S. Industrial Chemical Company (USI) to determine its compliance with federal RCRA regulations. In correspondence sent to USI on September 8, 1982 by Monte Nienkerk, you were advised that since no waiver demonstration was presented at the time of the inspection, USI was in apparent violation of 40 CFR, Part 265, Subpart F, Groundwater Monitoring. In a letter dated September 27, 1982, the Agency was advised that USI had submitted a partial waiver demonstration based on 40 CFR 265.90(c) to USEPA on February 18, 1982 and had assumed that it was accepted and in effect since no further correspondence was received from USEPA regarding the matter.

It is the Agency's contention that USEPA never acted on USI's waiver demonstration prior to turning the groundwater monitoring program over to Illinois. In any case, that is ancient history at this point since on May 17, 1982, the State of Illinois did assume authorization for the Interim Status RCRA regulations, and with that, authority to review waiver demonstrations for approval and/or disapproval within Illinois.

On October 26, 1982, over a year ago, the Agency made another inspection of USI for compliance with RCRA regulations. The inspection report prepared by Rick Hersemann, DLPC/FOS-Central Region, states that "USI's alternate groundwater monitoring program is inadequate and is in non-compliance with Title 35, Illinois Administrative Code, Part 725.191 and 725.192, of Subpart F -- Groundwater Monitoring." In additional correspondence dated as recent as March 1, 1983, the Agency listed several deficiencies relating to USI's program and requested additional information to determine the appropriateness of USI's partial monitoring program in accordance with Section 725.190(c). To date, the Agency has not received this information.

Although Title 35, Illinois Administrative Code, Part 725, Subpart F, Groundwater Monitoring regulations specify what specific information must be submitted by a facility, the Agency is certainly not restricted from requiring submittal of additional information deemed necessary. Section 3007 of RCRA states:

> "For purposes of developing or assisting in the development of any regulation or enforcing the provisions of this title, any person who generates, stores, treats, transports, disposes of, or otherwise handles or has handled hazardous wastes shall, upon request of any officer, employee or representative of the Environmental Protection Agency, duly designated by the Administrator, or upon request of any duly designated officer, employee or representative of a State having an authorized hazardous waste program, furnish information relating to such wastes and permit such person at all reasonable times to have access to, and to copy all records relating to such wastes. For the purposes of developing or assisting in the development of any regulation or enforcing the provisions of this title, such officers, employees or representatives are authorized..."

For a waiver demonstration as provided by Section 725.190(c) to be valid, it must establish the requirements listed in 725.190(c)(1) and 725.190(c)(2). Since it is impossible for the Agency to determine if USI has a low potential for migration of hazardous wastes or hazardous waste constituents to water supply wells and surface water via the uppermost aquifer based on current information provided, USI's original waiver demonstration is hereby denied and invalid. The Agency has never seen a statement from USEPA that the USI waiver demonstration was approved, and this Agency's attempt to gather sufficient information to make an approval or denial of it has been continually stonewalled over the past two years by USI's refusal to submit the necessary information to make such a determination.

Without an approved waiver as provided by Section 725.190(c), a facility's groundwater monitoring program must meet the requirements as contained in Section 725.190(b), which requires, among other things, sampling of drinking water suitability, groundwater quality and groundwater contamination

parameters. Additionally, the wells in USI's present groundwater monitoring system (i.e., wells B-1, B-2, B-3, and B-4) are not properly located to immediately detect migration of hazardous waste or hazardous waste consituents from the surface impoundment to the uppermost aquifer in accordance with the requirements of Section 725.191(a)(2). As such, USI should have installed its new wells (i.e., G-104, G-108, G-109 and G-110) much earlier and already established a sampling program for these wells which would bring USI into compliance with Subpart F.

USI is hereby informed that it is in violation of Title 35, Illinois Administrative Code, Part 725.191 and Part 725.192. With respect to these Class I violations, the Agency is specifically interested in receiving the following information:

1. Continued semi-annual and annual reporting of the parameters listed in Section 725.192(b)(3) for upgradient well B-4 and downgradient wells B-1, B-2, and B-3.

2. Establishment of background concentrations for parameters listed in Section 725.192(b)(1) and Section 725.192(b)(2) for upgradient well B-4 and downgradient wells B-1, B-2, and B-3. Sampling of these parameters should commence during the 4th quarter, 1983 and results submitted to the Agency no later than January 15, 1984.

3. Establishment of background concentrations for the parameters listed in Section 725.192(b)(1), Section 725.192(b)(2) and Section 725.192(b)(3) for the new monitoring wells (e.g., upgradient well G-104 and downgradient wells G-108, G-109, and G-110). Sampling of these parameters should commence during the 4th quarter, 1983 and results submitted to the Agency no later than January 15, 1984.

Item 2

At the March 19, 1982 inspection, USI advised the Agency that a hydrogeological study was being prepared which would show that USI's impoundment has a low potential for migration of hazardous wastes or hazardous waste constituents to water supply wells via the uppermost aquifer. Dependent upon the results of this study, USI might also decide to submit a waiver demonstration in accordance with Title 35, Illinois Administrative Code, Part 725, Section 725.190(e). This study was not presented to the Agency during the October, 1982 inspection of your facility. Instead, the Agency was advised at a meeting held on April 27, 1983 that USI would be submitting a request to USEPA to amend its Part A application. A portion of this amendment would involve deletion of the USI surface impoundment as a hazardous waste surface impoundment. If the surface impoundment is not delisted, then USI would apply for a waiver of the groundwater monitoring requirements as provided by Section 725.190(e) and would submit the geologic study in support of this waiver at that time.

In correspondence dated March 1, 1983, the Agency requested, along with other information, submittal of laboratory analyses of all waste streams entering the surface impoundment and an analysis of sludge from the bottom of the surface impoundment so that the Agency could determine if USI's partial sampling program was appropriate. Since USI has apparently abandoned its attempt to justify its status of non-compliance with Subpart F on the basis of Section 725.190(c) by continually refusing to submit this information to the Agency, USI is hereby advised that it would be to its advantage to submit, at the least, this information as a portion of any waiver demonstration based on Section 725.190(e).

Until such time as the Agency has opportunity to review this geologic study and determine if USI's waste is hazardous based solely on the corrosivity characteristic, USI will not have a valid waiver in accordance with Section 725.190(e). As such, USI must continue to operate its groundwater monitoring program in accordance with Title 35, Illinois Administrative Code, Part 725, Subpart F, Groundwater Monitoring.

Item 3

In reference to your May 26, 1983 and September 14, 1983 written notice of a statistically significant pH increase of groundwater from your downgradient observation wells, the Agency has not yet received a groundwater quality assessment plan as required by Title 35, Subpart F, Section 725.193(d)(2). Specifically, the requirements of Section 725.193(d)(3) and Section 725.193(d)(4) require a much more detailed evaluation than that provided by your geologist in your September 14, 1983 correspondence. Your assessment plan should be revised as soon as possible to include these requirements. Until the Agency receives a groundwater quality assessment plan, USI is hereby informed that it is in violation of Section 725.193(d)(2), Section 725.193(d)(3), and Section 725.193(d)(4).

The Agency is requesting that USI attend a pre-enforcement meeting on December 2, 1983 at 10:00 A.M. at the 2200 Churchill Road, IEPA Office. Agency counsel will be present at the meeting. USI is hereby requested to provide written notification to this office within 15 working days after the date of this meeting, informing the Agency of action taken or to be taken to correct these violations and/or to prevent future occurences. Such documentation should include a time frame for bringing your facility into compliance with Part 725, Subpart F regulations. Please address documentation to:

Illinois Environmental Protection Agency
Division of Land Pollution Control
2200 Churchill Road
Springfield, Illinois 62706

Attention: Mark Haney, Manager
Compliance Sub-Unit

If you have any questions concerning these issues, you may contact John Perry of my staff at 217/782-0455.

Sincerely,

Mark A. Haney, Manager
Compliance Sub-Unit
Compliance Monitoring Section
Division of Land Pollution Control

MAH:JP:mks:16/55 (Rvsd.tk 11/16/83)
(Rvsd. mks 11/18/83)

cc: Division File ✓
Central Region
Enforcement/Virginia Yang
John Perry
Greg Zak
Cheryl Putting

LPC #04180802-Douglas Co.
Tuscola/USI
STATE IDENTIFICATION NUMBE.
(If Applicable)

ILD #005078126
EPA IDENTIFICATION NUMB

RCRA INSPECTION REPORT - INTERIM STATUS STANDARDS
TREATMENT, STORAGE, AND DISPOSAL FACILITIES
Form A - General Facility Standards

I. General Information:

(A) Facility Name: U.S. Industrial Chemicals Company

(B) Street: P. O. Box 218 - U.S. Route 36

(C) City: Tuscola (D) State: IL. (E) Zip Code: 61953

(F) Phone: 217/253-3311 (G) County: Douglas

(H) Operator: U.S. Industrial Chemicals Company

(I) Street: P. O. Box 218 - U.S. Route 36

(J) City: Tuscola (K) State: IL. (L) Zip Code 61953

(M) Phone: 217/253-3311 (N) County: Douglas

(O) Owner: National Distillers & Chemical Corporation

(P) Street: 99 Park Avenue

(Q) City: New York (R) State: New York (S) Zip Code: 10016

(T) Phone: 212/949-5000 (U) County: --

(V) Date of Inspection: 9/23/83 (W) Time of Inspection (From) 9:30 A. (To) 4:00P

(X) Weather Conditions: 50°, Sunny, Dry

RECEIVED
NOV 18 1983
E.P.A. — D.L.P.C.
STATE OF ILLINOIS

Rev. 3-6-81/J.B.

IL 532-0894
LPC 92 12/81

(Y) Person(s) Interviewed	Title	Telephone
Elmer Alsmeyer	Group Leader Tech.	217/253-3311
G. Max Miller	Technical Mgr.	217/253-3311

(Z) Inspection Participants	Agency/Title	Telephone
David C. Jansen	I.E.P.A./EPS III	217/786-6892
Robert Stone	USEPA/Life Scientist	312/886-6151

(AA) Preparer Information

Name	Agency/Title	Telephone
David C. Jansen	I.E.P.A./EPS III	217/786-6892

David C. Jansen

II. SITE ACTIVITY:

Complete sections I through VII for all treatment, storage, and/or disposal facilities. Complete the forms (in parenthesis) in section VIII corresponding to the site activities identified below:

X A. Storage and/or Treatment
   1. Containers (I)
   2. Tanks (J)
   3. Surface Impoundments (K)
   4. Waste Piles (L)

___ B. Land Treatment (M)

___ C. Landfills (N)

X D. Incineration and/or Thermal Treatment (O and P)

___ E. Chemical, Physical, and Biological Treatment (Q)

Note: If facility is also a generator or transporter of hazardous waste complete sections IX and X of this form as appropriate.

II. GENERAL FACILITY STANDARDS
(Part 265 Subpart B)

35 Illinois Administrative Code (35 IL. A. C.) Part 725 Subpart B)

	Yes	No	NI*	Remark
(A) Has the Regional Administrator been notified regarding:				
1. Receipt of hazardous waste from a foreign source?	___	___	___	DOES NOT APPLY (DNA)
2. Facility expansion?	___	___	___	DNA
(B) General Waste Analysis:				
1. Has the owner or operator obtained a detailed chemical and physical analysis of the waste?	X	___	___	
2. Does the owner or operator have a detailed waste analysis plan on file at the facility?	X	___	___	
3. Does the waste analysis plan specify procedures for inspection and analysis of each movement of hazardous waste from off-site?	___	___	___	DNA
(C) Security - Do security measures include: (if applicable)				
1. 24-Hour surveillance?	X	___	___	
2. Artificial or natural barrier around facility?	X	___	___	
3. Controlled entry?	X	___	___	
4. Danger sign(s) at entrance?	X	___	___	
(D) Do Owner or Operator Inspections Include:				
1. Records of malfunctions?	___	X	___	Dike of Snake River eroded but not recorded in log
2. Records of operator error?	___	___	___	No errors
3. Records of discharges?	___	___	___	No discharges

*Not Inspected

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	Yes	No	NI*	Remarks
(B) Are copies of the Contingency Plan available at site and local emergency organizations?	X			
(C) Emergency Coordinator				
1. Is the facility Emergency Coordinator identified?	X			
2. Is coordinator familiar with all aspects of site operation and emergency procedures?	X			
3. Does the Emergency Coordinator have the authority to carry out the Contingency Plan?	X			
(D) Emergency Procedures				
If an emergency situation has occurred at this facility, has the Emergency Coordinator followed the emergency procedures listed in 265.56? (725.156)				Has not occurred

VI. MANIFEST SYSTEM, RECORDKEEPING, AND REPORTING
(Part 265 Subpart E)
35 IL. A. C. Part 725 Subpart E

	Yes	No	NI*	Remarks
(A) Use of Manifest System				
1. Does the facility follow the procedures listed in §265.71 for processing each manifest? (725.171)				DNA
2. Are records of past shipments retained for 3 years?				DNA
(B) Does the owner or operator meet requirements regarding manifest discrepancies?				DNA

*Not Inspected

(C) Operating Record

1.	Does the owner or operator maintain an operating record as required in 265.73? (725.173)	X			
2.	Does the operating record contain the following information:				
**b.	The method(s) and date(s) of each waste's treatment, storage, or disposal as required in Appendix I?	X			
c.	The location and quantity of each hazardous waste within the facility?	X			
***d.	A map or diagram of each cell or disposal area showing the location and quantity of each hazardous waste? (This information should be cross-referenced to specific manifest number, if waste was accompanied by a manifest.)				DNA
e.	Records and results of all waste analyses, trial tests, monitoring data, and operator inspections?	X			
f.	Reports detailing all incidents that required implementation of the Contingency Plan?				None needed to date
g.	All closure and post closure costs as applicable? (Effective 5-19-81)	X			

** See page 33252 of the May 19, 1980, Federal Register.

*** Only applies to disposal facilities

*Not Inspected

VII. CLOSURE AND POST CLOSURE
(Part 265 Subpart G)
35 IL. A. C. Part 725 Subpart G

	Yes	No	NI*	Remarks
(A) Closure and Post Closure				
1. Is the facility closure plan available for inspection by May 19, 1981?	X			
2. Has this plan been submitted to the Regional Administrator		X		
3. Has closure begun?		X		
4. Is closure estimate available by May 19, 1981?	X			
(B) Post closure care and use of property				
Has the owner or operator supplied a post closure monitoring plan? (effective by May 19, 1981)				DNA

VIII. FACILITY STANDARDS
(Part 265, Subparts I thru R)
35 IL. A. C. Part 725, Subparts I thru R

I
USE AND MANAGEMENT OF CONTAINERS

Facility Name: Tuscola/USI Date of Inspection: 9/23/83

	Yes	No	NI*	Remarks
1. Are containers in good condition?	X			
2. Are containers compatible with waste in them?	X			
3. Are containers stored closed?	X			
4. Are containers managed to prevent leaks?	X			
5. Are containers inspected weekly for leaks and defects?	X			
6. Are ignitable & reactive wastes stored at least 15 meters (50 feet) from the facility property line? (Indicate if waste is ignitable or reactive.)	X			

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	Yes	No	NI*	Remarks
4. Inspection schedule?	X			
5. Safety, emergency equipment?	X			
6. Security devices?	X			
7. Operating and structural devices?	X			
8. Inspection log?	X			
(E) Do personnel training records include: (Effective 5/19/81)				
1. Job titles?	X			
2. Job descriptions?	X			
3. Description of training?	X			
4. Records of training?	X			
5. Have facility personnel received required training by 5-19-81?	X			
6. Do new personnel receive required training within six months?	X			
(F) If required are the following special requirements for ignitable, reactive, or incompatible wastes addressed?				
1. Special handling?	X			
2. No smoking signs?	X			
3. Separation and protection from ignition sources?	X			

*Not Inspected

IV. PREPAREDNESS AND PREVENTION:
(Part 265 Subpart C)

35 IL. A. C. Part 725 Subpart C

	Yes	No	NI*	Remarks
(A) Maintenance and Operation of Facility:				
Is there any evidence of fire, explosion, or release of hazardous waste or hazardous waste constituent?	X			Waste stored in Snake River exited through breach in berm
(B) If required, does the facility have the following equipment:				
1. Internal communications or alarm systems?	X			
2. Telephone or 2-way radios at the scene of operations?	X			
3. Portable fire extinguishers, fire control, spill control equipment and decontamination equipment?	X			

Indicate the volume of water and/or foam available for fire control:

USI operates public water supply

(C) Testing and Maintenance of Emergency Equipment:				
1. Has the owner or operator established testing and maintenance procedures for emergency equipment?	X			
2. Is emergency equipment maintained in operable conditions?	X			
(D) Has owner or operator provided immediate access to internal alarms? (if needed)	X			

*Not Inspected

		Yes	No	NI*	Remarks
(E)	Is there adequate aisle space for unobstructed movement?	X			

V. CONTINGENCY PLAN AND EMERGENCY PROCEDURES:
(Part 265 Subpart D)

35 IL. A. C. Part 725 Subpart D

	(A) Does the Contingency Plan contain the following information:	Yes	No	NI*	Remarks
1. (§725.151 & 725.156)	The actions facility personnel must take to comply with §265.51 and 265.56 in response to fires, explosions, or any unplanned release of hazardous waste? (If the owner has a Spill Prevention, Control, and Countermeasures (SPCC) Plan, he needs only to amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of this Part (as applicable.)	X			
2.	Arrangements agreed by local police departments, fire departments hospitals, contractors, and State and local emergency response teams to coordinate emergency services pursuant to §265.37? (§725.137)	X			
3.	Names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinators?	X			
4.	A list of all emergency equipment at the facility which includes the location and physical description of each item on the list and a brief outline of its capabilities?	X			
5.	An evacuation plan for facility personnel where there is a possibility that evacuation could be necessary? (This plan must describe signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes?)				Not Necessary

*Not Inspected

	Yes	No	NI*	Remarks

8. Has the owner or operator observed the National Fire Protection Associations buffer zone requirements for tanks containing ignitable or reactive wastes?

Tank capacity: _____ gallons

Tank diameter: _____ feet

Distance of tank from property line _____ feet

(See table 2 - 1 through 2 - 6 of NFPA's "Flammable and Combustible Liquids Code - 1977" to determine compliance.)

K

SURFACE IMPOUNDMENTS

Facility Name: Tuscola/USI Date of Inspection: 9/23/83

	Yes	No	NI*	Remarks
1. Do surface impoundments have at least 60 cm (2 feet) of freeboard?	X			
2. Do earthen dikes have protective covers?	X			
3. Are waste analyses done when the impoundment is used to store a substantially different waste than before?				DNA
4. Is the freeboard level inspected at least daily?	X			
5. Are the dikes inspected weekly for evidence of leaks or deterioration?	X			
6. Are reactive & ignitable wastes rendered non-reactive or non-ignitable before storage in a surface impoundment? (If waste is rendered non-reactive or non-ignitable, see treatment requirements.)				DNA
7. Are incompatible wastes stored in different impoundments? (If not, the provisions of 40 CFR 265.17(b) apply.) (35 IL. A. C. 725.117 (b))				DNA

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	Yes	No	NI*	Remarks
3. Has the owner or operator addressed the waste analysis requirements of 265.402? (725.502)	___	___	___	_____
4. Are inspection procedures followed according to 265.403? (725.503)	___	___	___	_____
5. Are the special requirements fulfilled for ignitable or reactive wastes?	___	___	___	_____
6. Are incompatible wastes treated? (If yes, 265.17(b) applies.) (725.117 (b))	___	___	___	_____

Note: EPA has temporarily suspended the applicability of the requirements of the hazardous waste regulations in 40 CFR Parts 122, 264 and 265 to owners and operators of (1) wastewater treatment tanks that receive, store, and treat wastewaters that are hazardous waste or that generate, store or treat a wastewater treatment sludge which is a hazardous waste where such wastewaters are subject to regulation under Sections 402 or 307(b) of the Clean Water Act (33 U.S.C. 1251 et seq.) and (2) neutralization tanks, transport vehicles, vessels, or containers which neutralize wastes which are hazardous only because they exhibit the corrosivity characteristic under 40 CFR §261.2 or are listed as hazardous wastes in Subpart D of 40 CFR Part 261 only for this reason

IX

Complete this section if the owner or operator of a TSD facility also generates hazardous waste that is subsequently shipped off-site for treatment, storage, or disposal.

1. MANIFEST REQUIREMENTS

	Yes	No	NI*	Remarks
(A) Does the operator have copies of the manifest available for review?	X	___	___	_____
(B) Do the manifest forms reviewed contain the following information: (If possible, make copies of, or record information from, manifest(s) that do not contain the critical elements)				
1. Manifest document number?	X	___	___	_____
2. Name, mailing address, telephone number, and EPA ID Number of Generator	X	___	___	_____

	Yes	No	NI*	Remarks
3. Name and EPA ID Number of Transporter(s)?	X			
4. Name, address, and EPA ID Number of Designated permitted facility and alternate facility?	X			
5. The description of the waste(s) (DOT shipping name, DOT hazard class, DOT identification number)?	X			
6. The total quantity of waste(s) and the type and number of containers loaded?	X			
7. Required certification?	X			
8. Required signatures?	X			
(C) Does the owner or operator submit exception reports when needed?				None needed to date

2. PRE-TRANSPORT REQUIREMENTS

(A) Is waste packaged in accordance with DOT Regulations? (Required prior to movement of hazardous waste off-site)	X			
(B) Are waste packages marked and labeled in accordance with DOT regulations concerning hazardous waste materials? (Required to movement of hazardous waste off-site)	X			
(C) If required, are placards available to transporters of hazardous waste?	X			

Omit Section 3 if the facility has interim status and its Part A permit application describes storage

3. On Site Accumulation

		Yes	No	NI*	Remarks
1.	Are containers marked with start of accumulation date?				
2.	Are the containers of hazardous waste removed from installation before they can accumulate for more than 90 days?				
3. 35 IL. A. C. 725.274 and 725.276	Are wastes stored in containers managed in accordance with 40 CFR Part 265.174 and 265.176 (weekly inspections of containers, containers holding ignitable or reactive wastes located at least 15 meters (50 Feet) from facility's property line?				
4.	If wastes are stored in tanks, are the tanks managed according to the following requirements?				
	a. Are tanks used to store only those wastes which will not cause corrosion leakage or premature failure of the tank?				
	b. Do uncovered tanks have at least 60 cm (2 feet) of freeboard, dikes, or other containment structures?				
	c. Do continuous feed systems have a waste-feed cutoff?				
	d. Are required daily and weekly inspections done?				
	e. Are reactive & ignitable wastes in tanks protected or rendered non-reactive or non-ignitable? (If waste is rendered non-reactive or non-ignitable, see treatment requirements?				
	f. Are incompatible wastes stored in separate tanks? (If not, the provisions of 40 CFR §265.17(b) apply) (35 IL. A. C. 725.117 (b))				

*Not Inspected

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VI. RECORDKEEPING and REPORTING
(Part 262, Subpart D)
35 IL. A. C. Part 722, Subpart D

	Yes	No	NI*	Remarks
(A) Are Manifests, Annual Reports, Exception Reports, and all test results and analyses retained for at least three years?	X			
(B) Has the generator submitted Annual Reports and Exception Reports as required?	X			

VII. INTERNATIONAL SHIPMENTS
(Part 262, Subpart E)
35 IL. A. C. Part 722, Subpart E

	Yes	No	NI*	Remarks
Has the installation imported or exported Hazardous Waste?		X		

(If answered Yes, complete the following as applicable.)

	Yes	No	NI*	Remarks
1. Exporting Hazardous waste, has a generator:				
a. Notified the Administrator in writing?				
b. Obtained the signature of the foreign consignee confirming delivery of the waste(s) in the foreign country?				
c. Met the Manifest requirements?				
2. Importing Hazardous Waste, has the generator:				
Met the manifest requirements?				

*Not Inspected

X

TRANSPORTER REQUIREMENTS
40 CFR Part 263
35 IL. A. C. Part 723

Complete this Section if the owner or operator transports hazardous waste.

I. MANIFEST SYSTEM AND RECORDKEEPING
(Subpart B)

	Yes	No	NI*	Remarks
Are copies of the completed manifests or shipping paper(s) available for review and retained for three years?	___	___	___	_____

II. INTERNATIONAL SHIPMENTS

	Yes	No	NI*	Remarks
A. Does the transporter record on the manifest the date the waste left the U.S.?	___	___	___	_____
B. Are signed completed manifest(s) on file?	___	___	___	_____

V. MISCELLANEOUS

	Yes	No	NI*	Remarks
A. Does transporter transport hazardous waste into the U.S. from abroad?	___	___	___	_____
B. Does the transporter mix hazardous waste of different DOT shipping descriptions by placing them into a single container?	___	___	___	_____

NOTE: If (A) or (B) were answered "Yes" then the Transporter is also a Generator and must comply with the Generator regulations.

*Not Inspected

REMARKS

Use this section to briefly describe site activities observed at the time of the inspection. Note any possible violations of Interim Status Standards.

Apparent violations are noted in the attached letter and/or inspection report.

Attachment B

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FIGURES

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GROUND-WATER ASSESSMENT PLAN

U.S. Industrial Chemicals Co.

Tuscola, Illinois

INTRODUCTION

Statistical analysis of pH data from downgradient monitoring wells OW-8, 9 and 10 and upgradient well OW-4 by the Student t-test indicated a statistically significant increase in pH for samples obtained from OW-8 and OW-9 on May 3, 1983. Since the RCRA impoundment contains low pH waste water, this statistically significant increase in pH cannot be the result of leakage from the impoundment. In fact, it is physically impossible for low pH waste water to cause a pH increase in downgradient monitoring wells. As indicated in the June 10, 1983 letter from USI to Richard J. Carlson (IEPA), the observed difference in pH between the upgradient and downgradient monitoring wells is probably due to natural variability in ground-water quality.

This ground-water assessment plan is submitted to satisfy the requirements of Section 725.193(d).

DETERMINE PRESENCE OF CONTAMINANTS

The observation wells showing a change in indicator parameters (OW-8 and 9), in addition to the upgradient well (OW-4), will be

Attachment D

D. USI is located on a recharge area with the Kaskaskia River being a discharge area. Regional groundwater is separated by a groundwater divide on USI property. Groundwater west of this divide flows west past "Snake River," and discharges into the Kaskaskia River. Groundwater east of the divide flows east and discharges to the Embarass River.

KN:cla

Attachment E

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY MEMORANDUM

DATE: August 2, 1984

TO: Land Division File

FROM: DCJ David C. Jansen, DLPC/FOS - Central Region

SUBJECT: LPC #04180802 Douglas Co. - Tuscola/USI
ILD #005078126

U.S. Industrial Chemicals Co. (USI) is a natural gas processing facility located west of Tuscola on Route 36.

USI's hazardous waste facilities include a barrel storage area, a surface impoundment known as Snake River, and a process flare for thermal treatment.

USI also operates a deep well facility regulated under the UIC program.

Hazardous wastes known to be generated by USI include:

1). Spent degreasing solvent (F001) - a mixture of perchloroethylene, maethylene chloride, and 1,1,1-trichloroethane. 14 barrels of spent solvent were being stored in the southeast corner of the Dibasic building located in the northeast part of the facility. The last shipment of barrels off-site occurred on 2-8-83 under manifest #0570517.

2). Power house ion exchanger (catexer) regeneration water. This corrosive (D002) waste is discharged to Snake River - USI's triangular shaped surface impoundment. Analyses of this waste were conducted by USI on the following dates and with the following results:

9-9-81	pH	1.4	8-23-82	pH	0.7
10-5-81	pH	1.5	10-20-82	pH	1.0
3-15-82	pH	1.8			
6-8-82	pH	0.9			

3). Power house ion exchanger (annexer) regeneration water. This corrosive waste is discharged to USI's wastewater treatment plant via underground pipeline, although it can be discharged to Snake River. This waste is apparently discharged to a totally enclosed treatment facility, as defined in 720.110. pH analyses were conducted by USI on the following dates and with the following results:

9-9-81	pH	12.1	6-15-82	12.9
10-5-81	pH	11.8	8-23-82	12.5
3-15-82	pH	12.3	10-20-82	12.4

4). Waste catalysts that are a mixture of proprietary organic peroxides and kerosene (D001). This waste is generated in the polyethylene unit at the plant. Catalysts are used in this unit to adjust the characteristics of the polyethylene being manufactured. When the catalysts are changed, waste catalysts are generated and placed in 2 red, portable tanks or dumpsters identified as FD-23 or C-51, and D1942.

FD-23 and D1942 have working capacities of 230 and 350 gallons respectively.

FD-23 was labeled "C-51 waste catalyst only", and a metal tag on the dumpster read "waste catalyst collection started 7-23-84. Thermally treat at TWR flare prior to week of 10-22-84."

D1942 was labeled "Flammable" "DR1942 PCL waste catalyst FT24", and a metal tag on the dumpster read "waste catalyst collection started 7-30-84. Thermally treat at TWR flare prior to week of 10-29-84."

In 1984 waste catalysts were burned in the following amounts on the dates listed:

7-26-84	300 gallons
7-24-84	1000 gallons
5-30-84	150 gallons
5-3-84	300 gallons
5-2-84	300 gallons
4-26-84	(quantity not listed in USI's records)

In 1983, 1982, and 1981 a total of 2000, 3000, and 3300 gallons were burned respectively.

5.) Waste flammable reagents. This includes acetone, methanol, and benzene that are placed with used lubricating and process oils into a 500 gallon portable tank labeled "Oil dumpster". This container is located next to the laboratory. These wastes are emptied every two months for use as a supplemental fuel in an on-site boiler.

6.) Used ethanol and ether. This waste is collected in a 250 gallon portable tank labeled "waste alcohol", and is emptied every month by returning the alcohol or ether to USI's ethanol production facility for reclamation. During the inspection I observed a number of small, capped bottles in an open dumpster adjacent to the waste alcohol container. These bottles contained several milliliters of alcohol in them. These bottles are supposed to be emptied by inverting them into a collection rack draining to the alcohol tank. While we were looking at the bottles an employee dumped several more bottles with small quantities of alcohol in them into the dumpster. Mr. Alsmeyer assured me that this procedure was incorrect and would be rectified immediately.

A log of when the dumpsters were emptied was kept in the lab. The wastes listed in 5 and 6 above are exempted from regulation pursuant to 721.106(b).

A black 55 gal. drum labeled "spent chlorinated solvents" was also stored by the alcohol tank. Solvent waste was being accumulated here before placement in the barrel storage area.

Field pH tests (using color pHast brand pH paper) were conducted on waste streams entering Snake River from 3 pipes at the east end. Effluent of the east pipe had a pH of approx. 1. Proceeding clockwise, effluent from the remaining 2 pipes had pHs of approx. 3 and 6. The effluent leaving Snake River at the west end had a pH of approx. 3. Wastewater was flowing straight west to the outfall in the southwest corner of Snake River. Oily black deposits of polyethylene pellets remain in the impoundment.

We observed the facility briefly from the roof of the alcohol plant located just north of the coal pile. From here we proceeded to the barrel storage area. PCB wastes remain in storage in this area with the hazardous wastes.

I also inspected the area around the deep well at the north edge of the facility. Field pH of waste water from the alcohol unit ion exchange regeneration system measured approx. 3 as it exited a pipe located near the southwest corner of the east gypsum pile. The pipe was discharging a clear liquid into the ditch that collects runoff from the east gypsum pile. The ditch discharges to the lagoon from which water is pumped for injection into the deep well.

Upstream of this pipe, field pH of the clear dark brown water in the ditch measured approx. 1 at 2 locations. This water appeared devoid of any vegetation.

Water accumulating in the south drainage ditch at the toe of the west gypsum pile was discharging to the deep well lagoon via a pipe. Field pH of this pipe discharge was approx. 2.

I was unable to get close enough to the deep well lagoon shoreline, or to the shoreline of the adjacent lagoon (Pit 10) south to check pH. Fly ash had been dumped in the east end of pit 10. The water appeared dark in color.

With the field pH results indicating that the water tested had the characteristic of corrosivity, I told Mr. Alsmeyer that I wanted USI to run pH tests also. He agreed to do so. If the pH of the water in these ditches is confirmed as equal to or below 2, the ditches can be defined as hazardous waste surface impoundments.

Deficiencies in USI's financial assurance documents have been noted by IEPA personnel at 2200 Churchill. The deficiencies appear to center around USI's omission of closure cost estimates for their surface impoundment (Snake River). USI has attempted to withdraw the impoundment from their Part A (See 9-1-83 letter to Region V). USI considers the impoundment to be no longer subject to regulation.

After leaving the plant grounds I drove north of the gypsum piles and took several photographs. At the northeast corner of the east gypsum pile I noted 2 large manholes with pipes coming into them from the gypsum pile(See photos #1,4). A groundwater monitoring well was also noted nearby. A small pool of dark brown water (See photo #1) was observed in a ditch near one of the manholes. The ditch bordering the east edge of this pile appeared devoid of live vegetation.

A bean field was located just east of the east gypsum pile. In the roadside ditch at the north end of this field I noted a corrugated black plastic riser pipe. The pipe did not contain any water, but it may be a possible sampling point for the ground water table next to the gypsum pile.

Mr. Miller gave me 3 Polaroid photos of the barrel storage area and Snake River. These photos were given to me in response to my request to have photos taken of these areas during my inspection. USI does not allow IEPA to photograph any part of their facility. This situation should be rectified as soon as possible.

Violations of the interim status standards observed during the inspection are noted in the attached report and/or letter.

DCJ/bp
8-28-84
cc: DLPC/FOS, Central Region
D. Gimble/Enforcement
R. Stone/USEPA, Region V

Attachment F

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: August 27, 1984

TO: Land Division File

FROM: Rick Hersemann, DLPC/FOS - Central Region RAH

SUBJECT: LPC #0418080Z - DOUGLAS COUNTY - TUSCOLA/U.S. INDUSTRIAL CHEMICALS (SUBPART F)
ILD #005078126

An inspection of the U.S. Industrial Chemicals facility in Tuscola, Illinois, was conducted on August 27, 1984. Those present during the inspection included Mr. Elmer Alsmeyer, Group Leader-Technology; Mr. John Winkler, Senior Chemist; and Mr. Dale Elenberger, Mr. Dave Jansen, and Mr. Rick Hersemann of the IEPA, DLPC/FOS.

The purpose of the inspection was to check U.S. Industrial Chemical's (USI) compliance with Subpart F Interim Status Standards for groundwater monitoring. USI has a surface impoundment (Snake River) which accepts hazardous D002 (corrosive) wastewater. Several non-hazardous waste streams also enter Snake River. The waste streams mix and flow west thru the surface impoundment to an overflow pipe which leads to USI's wastewater treatment plant. Once treated, the water is discharged to the Kaskaskia River, per NPDES permit. Wastewater leaving Snake River for treatment usually has a pH above 2.0, however data submitted by USI shows the pH of the wastewater to be as low as 1.2 and as high as 12.4.

USI claimed a partial waiver of groundwater monitoring requirements for Snake River under 725.190(c). This waiver was denied by the Agency on March 2, 1984. USI has appealed the Agency's waiver denial to the Illinois Pollution Control Board. A hearing date had not been set on the date of this inspection. USI also filed an ammended Part A with USEPA - Region V to have Snake River delisted as a hazardous waste surface impoundment. USEPA had not acted on the delisting of Snake River as a hazardous waste surface impoundment on the date of this inspection.

USI also has two large waste gypsum piles, associated with their deep well injection facility, located on the north part of their facility. Rainfall runoff, which leaches thru the waste gypsum piles, is collected in ditches which drain into two large holding ponds, located between the two gypsum piles. The wastewater is pumped from the south holding pond into USI's injection well. The wastewater is injected into the Eminence-Potosi Dolomite formation, approximately one mile deep.

An ISS inspection was conducted at USI's facility on August 2, 1984 by Dave Jansen. During the August 2, 1984 inspection, a field pH of 1 was found in the ditch south of the east gypsum pile. This finding prompted a detailed inspection of the waste gypsum piles, ditches, and holding ponds during the August 27, 1984 Subpart F inspection and UIC inspection. Water samples and field pH were taken from water ponded in ditches around the waste gypsum piles, water ponded on top of the west gypsum pile, the north and south holding ponds, the injection well head, pit 10 (Flyash disposal pond),

monitor wells G104, G108, G109, G110, and the outfall of Snake River. A field pH of 2 was found at seven sample points on the ditches and holding ponds connected with the waste gypsum piles (See site sketch for locations). Confirmation of field pH by the Champaign Laboratory will subject the ditches and holding ponds to RCRA regulations. The ditches and holding ponds would be defined as hazardous waste surface impoundments and also be subject to Subpart F groundwater monitoring requirements.

The following information provides clarification and more detail to the Subpart F inspection checklists. Items are referenced to specific questions of Appendix A-1, A-3, B, and D checklists. Checklist items which are self-explanatory are not referenced. Checklist items needing clarification or more detail are referenced to the specific questions's number.

APPENDIX A-1

2. USI implemented an alternate groundwater monitoring program, claiming a partial waiver under 725.190(c). This waiver claim was denied by the Agency on March 2, 1984 and is being appealed to the Illinois Pollution Control Board by USI. USI's program consists of one upgradient well (G104) and three downgradient wells (G108, G109, and G110) screened in the uppermost saturated sand lenses underlying the facility. USI is considering these sand lenses to be the uppermost aquifer underlying the facility. Six other wells (G101, G102, G103, G105, G106 and G107) are located north and east of Snake River but are not included in the monitoring program. USI's groundwater monitoring program does not address the ditches and holding ponds located at the waste gypsum piles.

3. Data collected from the monitor wells for specific conductance indicate that upgradient well G104 may be affected from past disposal activities and may not be in the same groundwater flow system that flows underneath Snake River. USI was investigating the possibility of replacing G104 with G105 or installing a new upgradient well closer to Snake River. This has been put on hold, pending the outcome of the hearing before the Pollution Control Board.

4. Downgradient wells G108, G109, and G110 were installed just west of Snake River in 1983 to replace wells G101, G102, and G103 (which were determined to be too far away to detect prompt migration of hazardous waste).

5. If field pH of 2 is confirmed by the Champaign Laboratory, USI will become a multiple hazardous waste management facility. Under the current monitoring program, the waste gypsum piles, ditches, and holding ponds would not be adequately monitored.

6. Numbers and locations of wells correspond with data in the monitoring program. Due to tubing installed in wells for sampling purposes, depths of wells were not checked. The designated tubing, installed to the bottom of the wells, still function properly, indicating no problem with silting in at bottom of well.

7. Boring logs with well completion details are in Agency files.

8. A groundwater sampling plan is kept at the facility. Laboratory analyses were on file. Samples are collected and then analyzed at USI's laboratory for pH, specific conductance, and TOC. Samples to be analyzed for TOX are sent to Stewart Laboratory in Knoxville, Tennessee. Samples are analyzed in accordance with EPA guidelines. Proper procedures for collection, preservation, shipment, and chain of custody control are followed.

9. USI implemented and is still following an alternate groundwater monitoring program per their 725.190(c) partial waiver claim. USI completed the first year of sampling for parameters required under 725.192(b)(3) for wells G104, G108, G109, and G110 but not for parameters required under 725.192(b)(1) and 725.192(b)(2). USI is currently sampling wells G104, G108, G109, and G110 semi-annually for pH, specific conductance, TOC, and TOX.

10. A copy of USI's groundwater quality assessment program is in Agency files.

11. USI has analyzed for parameters in 725.192(b)(3) only.

APPENDIX A-3

1. A written waiver demonstration, which requests a partial waiver of the groundwater monitoring requirements under 725.190(c), is kept at the facility. The Agency denied the waiver on March 2, 1984.

2. The waiver demonstration is certified by Mr. Bruce Yare, certified geologist CPG #3436.

3. USI's waiver demonstration states that there is low potential for migration of hazardous waste from the Snake River surface impoundment. USI's waiver demonstration does not contain a site specific evaluation of water balance (runoff into Snake River and infiltration including all waste volumes and liquids entering Snake River). USI's waiver demonstration does not address the ditches and holding ponds associated with the waste gypsum piles.

APPENDIX B

1.3 USI was triggered into assessment per letters dated May 26, 1983 and September 14, 1983 for statistically significant pH increases in downgradient wells. Per USI's groundwater quality assessment program, wells were sampled for sulfate and chromium during the week of January 9, 1984. Evaluation of the data from sample results, along with the knowledge of the waste stream being acidic, USI concluded that the impoundment was not leaking and went back to sampling for indicator parameters on a semi-annual basis.

2.1 USI has an aerial photo of the facility included in the groundwater monitoring program. Two maps of the facility, scales 1:1000 and 1:2000, are also included. Significant topographic features are: Kaskaskia River west of the facility, Snake River surface impoundment, waste gypsum piles and associated ditches and holding ponds, on-site flyash disposal area, wastewater treatment lagoons, and Cabot Corporation's two surface impoundments. Shallow farm wells are located approximately 1 mile north of Snake River. USI has a deep injection disposal well and Cabot Corporation has two deep injection disposal wells.

2.2 USI has regional hydrogeologic information included on their maps in 2.1. USI is located on a recharge area with the Kaskaskia River being a discharge area. Regional groundwater is separated by a groundwater divide on USI's property. Groundwater west of the divide flows west, past Snake River, and discharges into the Kaskaskia River. Groundwater east of the divide flows east and discharges into the Embarrass River.

2.3 USI's plot plan consists of the maps previously mentioned in 2.1. Field pH measurements indicate that USI is a multiple hazardous waste facility. The waste gypsum piles and associated ditches and holding ponds are not adequately monitored.

2.4 Bruce Yare prepared a new site water table (potentiometric) contour map based on December 1983 water levels. A copy of the map is in Agency files. Downgradient wells G108, G109, and G110 are located just west of Snake River. Upgradient well G104 is located northeast of Snake River approximately 1500 feet. As previously mentioned in 3 of Appendix A-1, G104 may be affected by past disposal areas and may need to be replaced.

3.1 Soil borings were drilled under the supervision of Bruce Yare & Associates by Shaffer-Krimmel-Silver of Decatur, Illinois.

3.3 Ten soil borings were made by hollow stem auger for RCRA compliance. Monitor wells were installed in each of the ten borings. Copies of boring logs are in Agency files.

3.5 Lithologic samples were collected during the drilling by split spoon and shelby tube sampling. It is unknown at what interval the samples were collected.

4.1 See 3.1

4.2 Ten monitor wells were installed for RCRA compliance. Monitor wells G104, G108, G109, and G110 are in the current program. Monitor wells G101, G102, G103, G105, G106, and G107 remain functionable.

4.3 See boring logs and Table B-2.

5.1 Bruce Yare prepared two geologic cross-sections of Snake River. Snake River is approximately 8 feet deep from the top of the berm with a bottom elevation of 675.0 feet MSL.

5.2 USI's facility is underlain by approximately 100 feet of glacial till. Permeability of the clay tills range from 1.1×10^{-8} to 7.1×10^{-9} cm/sec. Permeabilities of gravelly clays 10 feet below ground surface range from 2.4×10^{-8} to 7.1×10^{-9} cm/sec. The uppermost saturated zone is sand lenses within glacial till clays.

5.3 Static water levels are measured by an electric water sounder at the time of sampling. Seasonal fluctuations in the static water levels occur which should not alter groundwater gradients and flow directions. At USI's facility a horizontal flow in the saturated zone is more likely to occur than a vertical flow.

5.4 Aquifer hydraulic properties were determined by falling head tests. Horizontal permeabilities were determined to be 0.7 x 10-5 to 2.2 x 10-5 cm/sec. Horizontal groundwater flow velocity was determined to be 0.1 foot/day to the west toward the Kaskaskia River.

6.1 Monitor wells are screened in the upper portion of the uppermost aquifer underlying the facility.

7.2 Monitor wells are sampled with a peristaltic pump. Each monitor well has a designated tygon tubing which connects to the sampling pump. This eliminates cross-contamination of samples.

8.0 Samples are collected and placed in the proper preservation bottles. Samples are delivered to the USI laboratory along with a lab sheet containing the proper chain of custody. Samples are refrigerated until time of analysis.

9.1 USI's laboratory analyzes samples for pH, specific conductance, and TOC. Stewart Laboratory in Knoxville, Tennessee analyzes samples for TOX.

9.5 USI's alternate groundwater monitoring program samples for pH, specific conductance, TOC, and TOX only. Drinking water suitability parameters and groundwater quality parameters are not tested for in this alternate program.

9.8 USI submits analysis results to the Agency in the Annual Reports.

10.0 Site verification of USI's facility was made by physically inspecting the area around Snake River, waste gypsum piles, holding ponds, ditches, flyash disposal area, deep injection well, and monitor wells. All items correspond to the plot plan.

An inspection of the Snake River surface impoundment showed the water level in the surface impoundment to be low. Wastewater entered the surface impoundment from the east and flowed in a straight line west to the outfall pipe on the west dike of the surface impoundment. A black-brown sludge composed of oil and polyethylene cubes covered the bottom and sides of Snake River. A sample (J-8) was collected of the effluent leaving the Snake River outfall. The water was clear with an oily sheen. Field pH of 5 was found on Snake River's effluent.

Monitor wells G104, G108, G109, and G110, which monitor shallow groundwater near Snake River, were sampled for inorganic analysis. The monitor wells were sampled with USI's peristaltic pump. All monitor well samples had field pH's of 6. All samples collected were split with USI representatives. Measurements of groundwater elevations were made by USI representatives on August 16, 1984 and August 23, 1984 when the wells were purged.

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A request was made to sample monitor well G106, which is located at the northeast corner of the east gypsum pile. A review of groundwater data for G106 indicated that the groundwater quality may be affected by the waste gypsum piles. The request to sample G106 was made to verify the water quality in G106. Elmer Alsmeyer denied the request to sample G106. Mr. Alsmeyer said that G106 was not in their program and was not subject to regulation. Mr. Alsmeyer said that the issue of sampling G106 should be addressed in a letter.

An inspection of the waste gypsum piles was made to collect water samples from the ditches and holding ponds which collect rainfall runoff before it is injected into the disposal well. The waste gypsum piles, ditches, and holding ponds cover approximately 80 acres on the north part of USI's facility. The 80 acre facility is mentioned in USI's groundwater monitoring program briefly but is not addressed as being subject to RCRA regulations.

The east gypsum pile is higher in elevation than the west gypsum pile. The east gypsum pile has a clay cap on top with a good growth of grass. A ditch, which collects runoff from the east gypsum pile, surrounds all four sides. This ditch drains into the north holding pond. Water was ponded in places in the ditch on the west, south and east sides of the east gypsum pile. The water quality was clear but also had a brownish discoloration. An alcohol waste stream enters the ditch south of the east gypsum pile by pipeline. This waste stream then flows north thru the ditch west of the east gypsum pile and enters the north holding pond.

The west gypsum pile is surrounded by ditches on the south, west, and north sides with the two holding ponds being located to the east. The south ditch drains into the south holding pond. The north ditch drains into the north holding pond. The west ditch was dry during the inspection. Water was ponded in places in the north and south ditch. Wastewater from the south holding pond is pumped by pipeline at times to the top of the west gypsum pile. The top of the west gypsum pile has two diked areas where the wastewater is pumped to evaporate. This system is operated in the summer months rather than pumping all the wastewater down the injection well. Water was ponded in both the north and south cells on top of the west gypsum pile.

The north holding pond receives the majority of the collected runoff. It is designed basically to promote settling of solids and promote evaporation. The north holding pond empties from its southwest corner into the south holding pond. From the south holding pond, the wastewater is injected into the disposal well (located southwest of the south holding pond) or recycled on top of the west gypsum pile for evaporation. The water level in the south holding pond was 11.5 feet.

Located south of the south holding pond is Pit 10. This pond was used at one time in association with USI's closed phosphoric acid plant. Pit 10 is currently being filled with flyash, which is generated from on-site. Pit 10 is an expansion of USI's flyash disposal site, located just adjacent and east of Pit 10.

FIELD PH MEASUREMENTS

Location	Field pH
SW Corner - South Ditch - East Pile	2
SE Corner - South Ditch - East Pile	2
Middle - East Ditch - East Pile	2
Alcohol Effluent Pipe - East Pile	4.5
NW Corner - West Ditch - East Pile	2
East Side - North Pond	2
South Side - North Pond	3
West Side - North Pond	3
North Side - South Pond	3
South Side - South Pond	3
SW Corner - South Pond	3
Recycle pipe leak - West Pile	3
North Side - Pit 10	3
SE Corner - South Ditch - West Pile	3
NE Corner - North Ditch - West Pile	2
SW Corner - North Cell - West Pile	2
Injection Well Head	2.5
Monitor Well G104	6
Monitor Well G108	6
Monitor Well G109	6
Monitor Well G110	6
Snake River Effluent	5

WATER SAMPLE LOCATIONS

Number	Location	Field pH
X-201	Well Head	2.5
G104	Well G104	6
G108	Well G108	6
G109	Well G109	6
G110	Well G110	6
J-1	South Ditch - East Pile	2
J-2	South Side - South Pond	3
J-3	North Side - Pit 10	3
J-4	South Ditch - West Pile	3
J-5	West Side - North Pond	3
J-6	North Cell - West Pile	2
J-7	North Ditch - West Pile	2
J-8	Snake River Effluent	5

Based on field pH measurements, the ditches and holding ponds, which collect rainfall runoff from the waste gypsum piles, would be defined as hazardous waste surface impoundments and subject to RCRA and Subpart F Groundwater Monitoring regulations. USI will have to address this issue.

APPENDIX D

1.0 Tuscola, Illinois, receives some of its water supply from Silurian dolomites. The withdrawal rate from this aquifer is unknown. The majority of Tuscola's water supply comes from the Kaskaskia River. Wastewater is injected into the Eminence-Potosi dolomite formation at rates of 200-300 gallons per minute from both USI's and Cabot Corporation's deep well injection facilities. Shallow farm wells are located approximately one mile north of the Snake River surface impoundment.

1.1 Copies of USI's maps are in Agency files.

1.2 See 5 of Appendix A-1.

1.3 Copies of boring logs and geologic cross-sections are in Agency files.

2.0 USI's Snake River surface impoundment is excavated into the insitu glacial till deposits. No special engineering features have been designed for Snake River to minimize the migration of leachate. Lime is not added to stabilize or neutralize the wastewater. The only neutralization that occurs is the dilution with other wastestreams. Data indicates that

the wastewater leaving Snake River has had a pH as low as 1.2 and as high as 12.4.

The waste gypsum piles have clay berms, ditches, sumps, and holding ponds to collect rainfall runoff which leaches thru the gypsum piles. This wastewater is then injected into USI's disposal well.

3.0 Some data concerning water balance is included in USI's groundwater monitoring program. This information was obtained from "Hydrologic Budgets for Three Small Watersheds in Illinois" by Schicht and Walton - 1961. Evapotranspiration is 21.1 inches/year and regional net infiltration is 10.4 inches/year. Site specific information for runoff into Snake River and infiltration into Snake River, including wastewater in the surface impoundment, is not addressed.

4.0 Since the water table is very high at USI's facility, the unsaturated zone is not addressed. Snake River comes in contact with the saturated zone. The pH of the material in the saturated zone is 7.5 to 8.0. According to USI's report, the acidic wastewater will be neutralized by the alkaline groundwater and subsurface materials. The cation exchange of the subsurface soils is high, 80-85 meq/100 gram calcium.

5.0 Hydrologic properties of the saturated zone were determined by soil permeabilities and falling head tests. Leakage from Snake River was calcualted to be 2.3 gallons/day vertically and 80 gallons/day horizontally. Falling head tests were performed on borings B-2, B-5, and B-6. The tests showed the horizontal permeability to be greater than the vertical permeability. Horizontal permeability ranged from 0.7×10^{-5} cm/sec to 2.2×10^{-5} cm/sec. The flow velocity of this horizontal movement was calculated to be 0.1 foot/day to the west toward the Kaskaskia River.

5.8 Water quality analyses were not performed on monitor wells to establish background data. Information gathered from wells in the area indicated the quality of the groundwater to be poor. Groundwater in the area is alkaline.

6.0 No computer modeling was used.

SUMMARY

USI's partial waiver claim under 725.190(c) for a reduction in groundwater monitoring requirements was denied by the Agency on March 2, 1984. USI appealed the waiver denial to the Illinois Pollution Control Board. USI remains in non-compliance with the 35 Illinois Administrative Code, Part 725,

ILLINOIS EPA
Environmental Protection Agency
4500 S. Sixth Street Springfield, IL. 62706
Ph. (217) 786-6892

CERTIFIED MAIL
#157069

August 31, 1984

Refer to: LPC #04180802 - Douglas County
Tuscola/U.S. Industrial Chemicals Co.
(SUBPART F)
ILD #005078126
COMPLIANCE INQUIRY LETTER

U. S. Industrial Chemicals Co.
P. O. Box 218
Tuscola, Illinois 61953

ATTENTION: Mr. T. J. Tadler
Plant Manager

Dear Mr. Tadler:

An inspection of your facility was conducted by representatives of the Illinois Environmental Protection Agency (IEPA) on August 27, 1984. The purpose of the inspection was to determine your facility's compliance with the 35 Illinois Administrative Code (35 IL. A. C.), Part 725, Subpart F, Groundwater Monitoring requirements. The following is a list of apparent Subpart F violations which were noted during the inspection.

... 35 IL. A. C., Section 725.191(a)(1) -- Water analysis data for specific conductance indicates that upgradient monitor well G104 may be affected by an outside source of contamination and may not be representative of background groundwater quality in the uppermost aquifer near the facility. Demonstrations should be conducted to determine if monitor well G104 is truly representative of background groundwater quality. If demonstrations determine that monitor well G104 is not a representative upgradient well, a new upgradient well shall be installed which is representative of background groundwater quality. The upgradient well should be indicative of groundwater flowing beneath the surface impoundment.

... 35 IL. A. C., Section 725.192 -- Failure to establish initial background concentrations for parameters listed in 725.192(b)(1) and 725.192(b)(2) for monitor wells G104, G108, G109, and G110

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as required by 725.192(c)(1). Failure to sample monitor wells G104, G108, G109, and G110 annually for parameters listed in 725.192(b)(2) as required by 725.192(d)(1).

... 35 IL. A. C., Section 725.194(a)(1) -- Failure to keep records of the analysis required in Section 725.192(c) and 725.192(d).

During the inspection, water samples and field pH tests were collected on water that had accumulated in the ditches and holding ponds associated with the waste gypsum piles. Water samples were split with Mr. Alsmeyer and Mr. Winkler for analysis at USI's laboratory. A field pH of two (2) was found at seven sample locations. If the field pH test results are confirmed by I.E.P.A.'s laboratory or USI's laboratory, the ditches and holding ponds will be defined as hazardous waste surface impoundments and be subject to Subpart F Groundwater Monitoring requirements.

The Agency believes that the waste gypsum piles may be affecting the shallow groundwater quality underlying the facility. During the inspection, Mr. Hersemann requested that the Agency sample monitor well G106, located just northeast of the waste gypsum piles. This request was denied by Mr. Alsmeyer. Under the authority of the Illinois Environmental Protection Act, Section 4(d), Agency personnel have the authority to collect samples as deemed necessary to monitor environmental quality. The Agency is hereby requesting to collect a sample from monitor well G106 during the next inspection.

You are hereby requested to submit to this office, within fifteen (15) days of receipt of this letter, a description of steps taken to correct the apparent violations described in this letter. Failure to correct these apparent violations may result in enforcement actions. Please send your reply to the above address. Should you have any questions concerning this matter, please contact Mr. Hersemann of my staff at the above number.

Sincerely,

Glenn D. Savage Jr.

Glenn D. Savage, Jr.
Central Region Manager
Land Field Operations Section
Division of Land Pollution Control

GDS/RAH/cp

Enclosure

cc: DLPC/Division File
DLPC/FOS, Central Region
DLPC/Compliance Monitoring
DLPC/Enforcement, D. Gimbel (Maywood)
USEPA/Region V, R. Stone

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APPENDIX A-1

FACILITY INSPECTION FORM FOR COMPLIANCE WITH INTERIM STATUS STANDARDS COVERING GROUND-WATER MONITORING

Company Name: U.S. Industrial Chemicals; IEPA I.D. Number: 04180802

Company Address: P.O. Box 218; USEPA I.D. Number: 005078126

Tuscola, IL. 61953 Inspector's Name: Rick Hersemann

DLPC/FOS

Company Contact/Official: Elmer Alsmeyer; Branch/Organization:

Title: Group Leader - Technology; Date of Inspection: August 27, 1984

John Winkler - Senior Chemist

	Yes	No	Unknown	Wavied
Type of facility: (check appropriately)				
a) surface impoundment "Snake River", Injection Well Ponds, Ditches	X			
b) landfill - Flyash (non-Haz.)	X			
c) land treatment facility		X		
d) disposal waste pile* Gypsum Piles	X			
Ground-Water Monitoring Program				
1. Was the ground-water monitoring program reviewed prior to site visit?	X			
If "No,"				
a) Was the ground-water program reviewed at the facility prior to site inspection?				
2. Has a ground-water monitoring program (capable of determining the facility's impact on the quality of groundwater in the uppermost aquifer underlying the facility) been implemented? 725.190(a)		X		

*Listed separate from landfill for convenience of identification.

cc: DLPC/Division File ✓
DLPC/FOS - Central Region (2)
DLPC/Compliance Monitoring
DLPC/Enforcement - D. Gimbel
U.S.E.P.A./Region V - B. Stone.
U.S. Industrial Chemicals

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	Yes	No	Unknown	Wavied
3. Has at least one monitoring well been installed in the uppermost aquifer hydraulically upgradient from the limit of the waste management area? 725.191(a)(1)	X	---	G104	---
a) Are ground-water samples from the uppermost aquifer, representative of background ground-water quality and not affected by the facility (as ensured by proper well number, locations and depths?)	---	---	X	
4. Have at least three monitoring wells been installed hydraulically downgradient at the limit of the waste handling or management area? 725.191(a)(2)	X	---	G108, G109, G110	
a) Do well numbers, locations and depths ensure prompt detection of any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to the uppermost aquifer?	X	---		---
5. Have the locations of the waste management areas been verified to conform with information in the ground-water program?	X	---	---	
a) If the facility contains multiple waste management components, is each component adequately monitored?	---	X	Field pH of 2 found in ponds and ditches associated with waste gypsum piles.	
6. Do the numbers, locations, and depths of the ground-water monitoring wells agree with the data in the ground-water monitoring system program? If "No," explain discrepancies.	X	---	---	
7. Well completion details. 725.191(c)				
a) Are wells properly cased?	X	---	---	
b) Are wells screened (perforated) and packed where necessary to enable sampling at appropriate depths?	X	---	---	
c) Are annular spaces properly sealed to prevent contamination of ground-water?	X	---	---	

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	Yes	No	Unknown	Wavied
8. Has a ground-water sampling and analysis plan been developed? 725.192(a)	X			
a) Has it been followed?	X			
b) Is the plan kept at the facility:	X			
c) Does the plan include procedures and techniques for:				
1) Sample collection?	X			
2) Sample preservation?	X			
3) Sample shipment?	X			
4) Analytical procedures?	X			
5) Chain of custody control?	X			
9. Are the required parameters in ground-water samples being tested quarterly for the first year? 725.192(b) and 725.192(c)(1)		X		
a) Are the ground-water samples analyzed for the following:				
1) Parameters characterizing the suitability of the ground-water as a drinking water supply? 725.192(b)(1)		X		
2) Parameters establishing ground-water quality? 725.192(b)(2)		X		
3) Parameters used as indicators of ground-water contamination? 725.192(b)(3)	X			
(i) For each indicator parameter are at least four replicate measurements obtained at each upgradient well for each sample obtained during the first year of monitoring? 725.192(c)(2)	X			
(ii) Are provisions made to calculate the initial background arithmetic mean and variance of the respective parameter concentrations or values obtained from the upgradient well(s) during the first year? 725.192(c)(2)	X			

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	Yes	No	Unknown	Wavied
b) For facilities which have completed first year ground-water sampling and analysis requirements:				
1) Have samples been obtained and analyzed for the ground-water quality parameters at least annually? 725.192(d)(1)		X		
2) Have samples been obtained and analyzed for the indicators of ground-water contamination at least semi-annually? 725.192(d)(2)	X			
c) Were ground-water surface elevations determined at each monitoring well each time a sample was taken? 725.192(e)	X			
d) If it was determined that modification of the number, location or depth of monitoring wells was necessary, was the system brought into compliance with 725.191(a)? 725.193	X		"Snake River" Impound monitoring well system	
10. Has an outline of a ground-water quality assessment program been prepared? 725.193(a)	X			
a) Does it describe a program capable of determining:				
1) Whether hazardous waste or hazardous waste constituents have entered the ground-water?	X			
2) The rate and extent of migration of hazardous waste or hazardous waste constituents in ground-water?	X			
3) Concentrations of hazardous waste or hazardous waste constituents in ground-water?	X			
b) Were records kept of the analyses and evaluations, specified in the ground-water quality assessment (throughout the active life of the facility)? 725.194(b)(1)	NA			
1) If a disposal facility, were(are) records kept through the post-closure period as well?	NA			

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	Yes	No	Unknown	Wavied
11. Have records been kept of analyses for parameters in 725.192(c) and (d)? 725.194(a)(1)	___	X		725.192 (6) (3) parameters only
12. Have records been kept of ground-water surface elevations taken at the time of sampling for each well? 725.194(a)(1)	X	___		
13. Have records been kept of required elevations in 725.192(e)? 725.194(a)(1)	X	___		

*EPA will be proposing (Spring 1982) to replace this reporting requirement with an exception reporting system where reports will be submitted only where maximum contaminant levels or significant changes in the contamination indicators or other parameters are observed. EPA has delayed compliance stage for 14 a) above until August 1, 1982 (Federal Register, February 23, 1982, p. 7841-7842) to be coupled with exception reporting in the interim.

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APPENDIX A-3

INSPECTION COMPLIANCE FORM FOR DEMONSTRATING
A WAIVER OF INTERIM STATUS REQUIREMENTS

Company Name: U.S. Industrial Chemicals; IEPA I.D. Number: 04180802

Company Address: P.O. Box 218; USEPA I.D. Number: 005078126

Tuscola, IL 61953 Inspector's Name: Rick Hersemann

Company Contact: Elmer Alsmeyer; Branch/Organization: _____

Title: Group Leader - Technology; Date of Inspection: August 27, 1984

	Yes	No	Unknown
1. Is a written waiver demonstration kept at the site?	X		
2. Is the demonstration certified by a qualified geologist or geotechnical engineer? 725.190(c)	X		
3. Does the waiver demonstration establish:			
a) The potential for migration of hazardous waste or hazardous waste constituents from the facility to the uppermost aquifer? 725.190(c)(1)		X	
b) An evaluation of a water balance including:			
1) Precipitation?	X		
2) Evapotranspiration?	X		
3) Runoff?		X	
4) Infiltration? (including any liquid in surface impoundments)		X	
c) Unsaturated zone characteristics?	X		
1) Geologic materials?	X		
2) Physical properties?	X		
3) Depth to ground-water?	X		

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	Yes	No	Unknown
d) The potential for hazardous waste or hazardous waste constituents which may enter the uppermost aquifer to migrate to a water supply well or surface water, by evaluation of: 725.190(c)(2)			
1) Saturated zone characteristics, including:			
(a) Geologic materials?	X		
(b) Physical properties?	X		
(c) Rate of ground-water flow?	X		
2) Proximity of the facility to water supply wells or surface water?	X		

Note: Waiver request under 725.190(c) denied by Compliance Monitoring on March 2, 1984. Appeal of denial made by USI before Illinois Pollution Control Board.

2.1.3 Are there any significant topographic or surficial features evident? (Y/N) Y

If yes, describe Waste gypsum piles and associated ditches and ponds, flyash disposal site, Snake River impoundment, Wastewater treatment lagoons, Kaskaskia River

2.1.4 Are there any streams, rivers, lakes, or wet lands near the facility? (Y/N) Y

If yes, indicate approximate distances from the facility Snake River impoundment, ponds and ditches near waste gypsum piles, impoundments at wastewater treatment plant, Kaskaskia River, two impoundments at Cabot Co.

2.1.5 Are there any discharging or recharging wells near the facility? (Y/N) Y

If yes, indicate approximate distances from the facility. Deep Well injection facility on-site
2 Deep Wells at Cabot Corp - east
Shallow farm wells - 1 mile north

2.2 Is a regional hydrogeologic map of the area included? (This information may be shown on 2.1) (Y/N) Y

If yes:

2.2.1 Are major areas of recharge/dishcarge shown? (Y/N) N

If yes, describe. _____

2.2.2 Is the regional ground-water flow direction indicated? (Y/N) Y

2.2.3 Are the potentiometric contours logical? (Y/N) Y
If not, explain. _____

2.3 Is a facility plot plan included? (Y/N) Y

2.3.1 Are facility components (landfill areas, impoundments, etc.) shown? (Y/N) Y

2.3.2 Are any seeps, springs, streams, ponds, or wetlands indicated? (Y/N) Y

3.0 Soil Boring/Test Pit Details

3.1 Were soil borings/test pits made under the supervision of a qualified professional? (Y/N) Y

If yes,

3.1.1 Indicate the individual(s) and affiliation(s): Bruce Yare & Associates; Shaffer-Krimmel-Silver
2900 N. Broadway, Decatur, IL. 62526

3.1.2 Indicate the drilling/excavating contractor, if known
Shaffer-Krimmel-Silver

3.2 If soil borings/test pits were made, indicate the method(s) of drilling/excavating:

- Auger (hollow or solid stem) X
- Mud rotary
- Air rotary
- Reverse rotary
- Cable tool
- Jetting
- Other, including excavation (explain)

3.3 List the number of soil borings/test pits made at the site

3.3.1 Pre-existing 0

3.3.2 For RCRA compliance 10

3.4 Indicate borehole diameters and depths (if different diameters and depths use TABLE B-1).

3.4.1 Diameter: 7 inch

3.4.2 Depth: All wells are approximately 30 feet deep

3.5 Were lithologic samples collected during drilling? (Y/N) Y

If yes,

3.5.1 How were samples obtained? (Check method(s))

- Split spoon X
- Shelby tube, or similar X
- Rock coring
- Ditch sampling
- Other (explain)

INFORMATION TABLE B-1

BORING NO.	DEPTH	DIAMETER

4.3.3 Are annular spaces sealed? (Y/N) Y

If yes, describe:

- bentonite slurry X
- Cement grout X
- Other (explain) _____

- Thicknesses of seals Approximately 5 Feet

4.3.4 If "open hole" wells, are the cased portions sealed in place? (Y/N) NA

If yes, describe how: _____

4.3.5 Are there cement surface seals? (Y/N) Y

If yes,

- How thick? _____

4.3.6 Are the wells capped? (Y/N) Y

If yes,

- Do they lock? (Y/N) Y

4.3.7 Are protective standpipes cemented in place? (Y/N) Y

4.3.8 Were wells developed? (Y/N) Y

If yes, check appropriate method(s):

- Air lift pumping X
- Pumping and surging ____
- Jetting ____
- Bailing ____
- Other (explain) _____

5.0 Aquifer Characterization

5.1 Has the extent of the uppermost saturated zone (aquifer) in the facility area been defined? (Y/N) Y

If yes,

5.1.1 Are soil boring/test pit logs included? (Y/N) Y

5.1.2 Are geologic cross-sections included? (Y/N) Y

INFORMATION TABLE B-2

	WELL NO.	G107	G108	G109	G110		
	GROUND ELEVATION	688.5	676.6	676.2	677.1		
	TOTAL DEPTH	29.7	30.0	29.8	29.2		
WELL CASING	TYPE MATERIAL	PVC	PVC	PVC	PVC		
	DIAMETER	2"	2"	2"	2"		
	LENGTH	32.9	33.0	33.0	32.3		
	STICK-UP	3.2	3.0	3.2	3.1		
	TOP ELEVATION	691.7	679.6	679.4	680.2		
	BOTTOM ELEVATION	658.8	646.6	646.4	647.9		
WELL SCREEN	DEPTH TOP/BOTTOM	9.8 / 29.7	10.9 / 30.0	10.6 / 29.8	10.7 / 29.2	/	/
	TYPE MATERIAL	PVC	PVC	PVC	PVC		
	DIAMETER	2"	2"	2"	2"		
	LENGTH	19.9	19.1	19.2	18.5		
	SLOT SIZE	10	10	10	10		
	TOP ELEVATION	678.7	665.7	665.6	666.4		
	BOTTOM ELEVATION	658.8	646.6	646.4	647.9		
OPEN HOLE OR SAND/GRAVEL PACK	DEPTH TOP/BOTTOM	/	/	/	/	/	/
	DIAMETER						
	LENGTH						
	TOP ELEVATION						
	BOTTOM ELEVATION						

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5.3.2.2 Do the water level fluctuations alter the general ground-water gradients and flow directions? (Y/N) N

If yes,

5.3.2.3 Will the effectiveness of the wells to detect contaminants be reduced? (Y/N) N

Explain _____

_____

_____

5.3.2.4 Based on water level data, do any head differentials occur that may indicate a vertical flow component in the saturated zone? (Y/N) N

If yes, explain Horizontal Flow occurs

_____

_____

5.4 Have aquifer hydraulic properties been determined? (Y/N) Y

If yes,

5.4.1 Indicate method(s):

- Pumping tests ____
- Falling/constant head tests X
- Laboratory tests (explain) X - Lab permeabilities

_____

_____

5.4.2 If determined, what are the values for:

- Transmissivity ____
- Storage coefficient ____
- Leakage 2.3 gal/day
- Permeability Vertical: $2.4 \times 10^{-8} - 7.1 \times 10^{-9}$; $1.1 \times 10^{-8} - 7.1 \times 10^{-9}$
  Horizontal: $0.7 \times 10^{-5} - 2.2 \times 10^{-5}$
- Porosity 35%
- Specific capacity ____

5.4.3 In cases where several tests were undertaken, were discrepancies in the results evident? (Y/N) N

If yes, explain _____

_____

5.4.4 Were horizontal ground-water flow velocities determined? (Y/N) Y

If yes, indicate rate of movement 0.1 Ft./Day toward the Kaskaskia River to west

7.2.4 Are organic constituents to be sampled? (Y/N) Y

If yes,

7.2.4.1 Are samples collected with equipment to minimize absorption and volatilization? (Y/N) Y

If yes,

Describe equipment Peristaltic pump with designated tubing for each well is used

8.0 Sample Preservation and Handling

8.1 Have appropriate sample preservation and preparation procedures been followed (filtration and preservation where appropriate)? (Y/N) Y

8.2 Are samples refrigerated? (Y/N) Y

8.3 Are EPA recommended sample holding period requirements adhered to? (Y/N) Y

8.4 Are suitable container types used? (Y/N) Y

8.5 Are provisions made to store and ship samples under cold conditions (ice packs, etc.)? (Y/N) Y

8.6 Is a chain of custody control procedure clearly defined? (Y/N) Y

8.7 Is a specific chain of custody form illustrated? (Y/N) Y

If yes,

8.7.1 Will this form provide an accurate record of sample possession from the moment the sample is taken until the time it is analyzed? (Y/N) Y

9.0 Sample Analysis and Record Keeping

9.1 Is sample analysis performed by a qualified laboratory? (Y/N) Y

Indicate lab Stewart Lab - Knoxville, Tenn. USI Lab

9.2 Are analytical methods described in the records? (Y/N) Y

9.2.1 Are analytical methods acceptable to EPA? (Y/N) Y

9.3 Are the required drinking water suitability parametters tested for? (Y/N) N

9.4 Are the required groundwater quality parameters tested for? (Y/N) N

10.1.2 Are all of the components of the facility identified during the inspection addressed in the monitoring program documentation? (Y/N) N

If not, explain Ponds and ditches associated with waste gypsum piles are not addressed

10.1.3 Are there any streams, lakes or wetlands on or adjacent to the site? (Y/N) Y

If yes, indicate distances from waste management areas

Kaskaskia River - approximately 1/4 mi. west.

10.1.4 Are there any signs of water quality degradation evident in the surface water bodies? (Y/N) Y

If yes, explain Water ponded in ditches around the waste gypsum piles show signs of water quality degradation.

10.1.5 Is there any indication of distressed or dead vegetation on or adjacent to the site? (Y/N) N

If yes, explain

10.1.6 Are there any significant topographic or surficial features on or near the site (e.g., recharge or discharge areas)? (Y/N) Y

If yes, explain Waste gypsum piles, on-site ponds and ditches, flyash disposal area

10.1.7 Are the monitor well locations and numbers in agreement with the monitoring program documentation? (Y/N) Y

If no, explain

10.1.7.1 Were locations and elevations of the monitor wells surveyed into some known datum? (Y/N) Y

If not, explain

10.1.7.2 Were the wells sounded to determine total depth below the surface? (Y/N) N

If not, explain USI purged wells on 8/16/84 and 8/23/84 - wells checked at that time

10.1.7.3 Were discrepancies in total depth greater than two feet apparent in any well? (Y/N) N

If yes, explain Designated tubing to bottom of wells still function - indicating no problem with silting

10.1.8 Was ground water encountered in all monitoring wells? (Y/N) Y

If not, indicate which well(s) were dry _____

10.1.9 Were water level elevations measured during the site visit? (Y/N) N

If yes, indicate well number and water level elevation _____

If not, explain _____

Elevations

Well #	TOC Elev.	8/16/84 Depth H_2O	8/16/84 Water Elev.	8/23/84 Depth H_2O	8/23/84 Water Elev.
G104	695.0	8.10	686.9	8.26	686.7
G105	697.0	7.51	689.5	7.68	689.3
G108	679.6	7.04	672.6	9.86	669.7
G109	679.8	10.19	669.6	13.94	665.9
G110	680.2	8.59	671.6	8.89	671.3

Note: Wells purged by USI after determination of elevations

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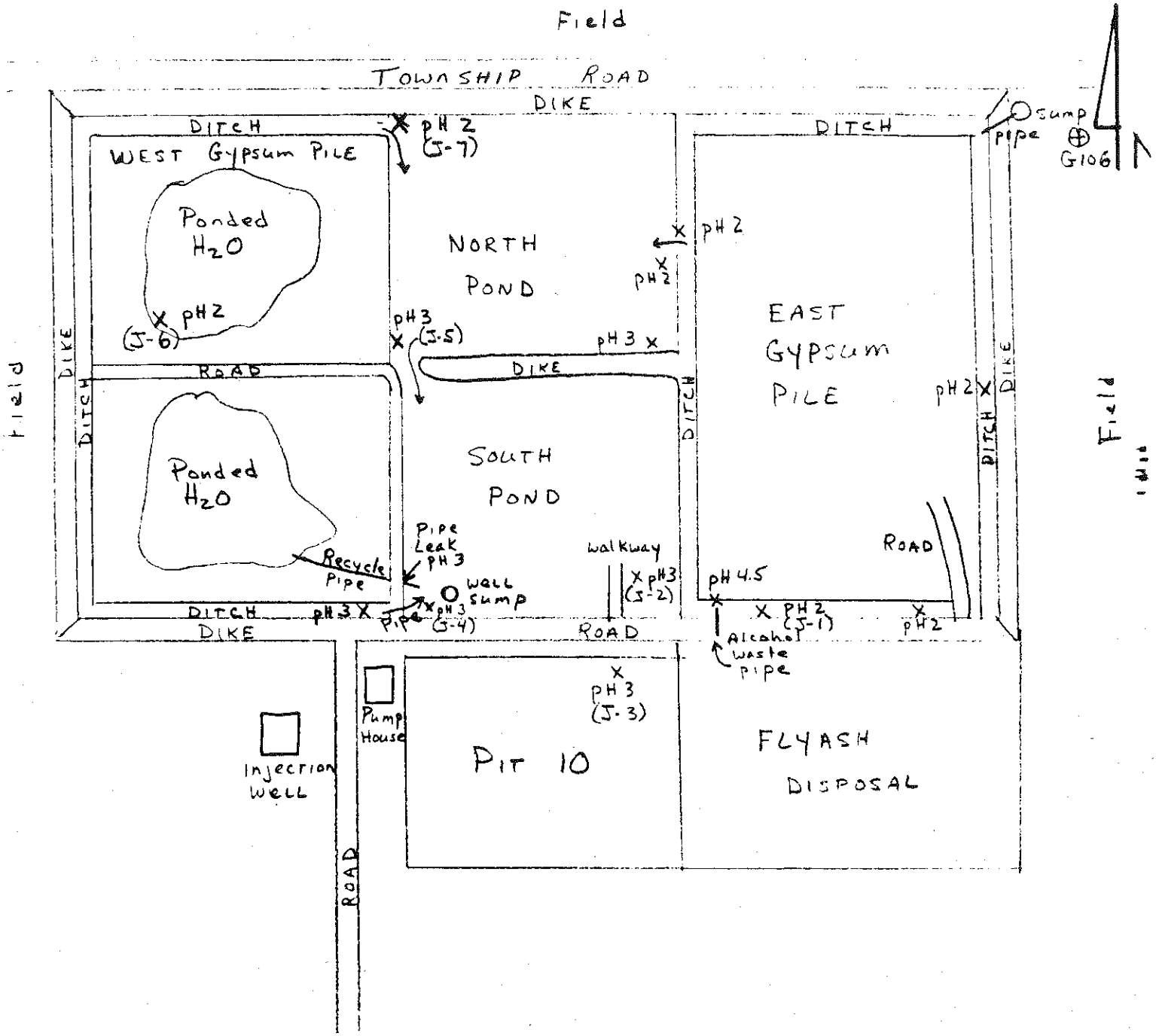
DOUGLAS Co. - LPC 04180802 DATE: August 27, 1984

TUSCOLA / USI TIME: 9:00 A.M - 2:00 P



X- Sample Locations

NOT TO SCALE

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PC 67 11/80

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1.2 Map of Facility (scale at least 1" = 200'), showing the locations of facility components (e.g., surface impoundments, and disposal areas), and groundwater monitoring wells, springs, seeps, streams, etc.

1.2.1 Is the facility a multi-component facility? (Y/N) Y

1.2.2 Are locations of test borings (or pits) and observation wells shown? (Y/N) Y

1.2.2.1 Are borings, pits, or wells located in or near the waste management area? (Y/N) Y

If yes,

1.2.2.2 Do the borings, pits, or wells appear to be of such number, and depth to adequately characterize the substrate? (Y/N) N

Give brief detail If field pH of 2 is verified, monitoring system will not adequately monitor ponds and ditches at waste gypsum piles

1.3 Boring Logs and Geologic Cross Sections

1.3.1 Are there logs of the borings or test pits? (Y/N) Y

1.3.2 How are the sub-surface materials described: (check as appropriate)

1.3.2.1 Unified Soil Classification System X

1.3.2.2 U.S.D.A. Soil Classification System ____

1.3.2.3 Burmeister Classification System ____

1.3.2.4 Other (explain)_____

_____

1.3.3 Are geologic cross-sections included? (Y/N) Y

1.3.4 Is there evidence of confining (low permeability) layers beneath the facility? (Y/N) Y

2.0 Waste Characterization

2.1 Has the waste material been stabilized in any way to preclude the potential of leachate being generated? (Y/N) N

If yes, briefly explain methods_____

_____

3.5 Is there a positive net infiltration recorded? (Y/N) Y

If yes, how much? Regional net infiltration is 10.4 in/yr.

4.0 Unsaturated Zone Characteristics

4.1 Has the applicant demonstrated that the unsaturated zone will isolate any waste derived leachate from the water table, chemically or physically? (Y/N) N

Briefly describe mechanism(s)_____

_____

_____

4.2 Physical Properties

4.2.1 Has the applicant defined the unsaturated thickness and areal variability? (Y/N) N

Briefly describe_____

_____

_____

4.2.2 Has the primary and secondary porosity (if any) of the unsaturated zone been determined? (Y/N) N

Briefly describe_____

_____

4.2.3 Have hydraulic conductivity curves for each sediment type comprising the unsaturated zone been established? (Y/N) N

4.2.4 Have textural analyses been performed? (Y/N) Y

4.2.5 Have bulk densities been estimated? (Y/N) Y

4.3 Chemical Properties

4.3.1 Has cation exchange been cited as an attenuation means? (Y/N) Y

If yes,

4.3.1.1 Type of clay X Calcareous

4.3.1.2 Percent of clay X

4.3.1.3 Percent of organics ____

4.3.1.4 pH of materials X 7.5 - 8.0

5.5 Are static water level measurements included? (Y/N) Y

5.6 Is a site water table (equipotential) contour map included? (Y/N) Y

5.6.1 Does the contour map appear logical based on the presented data and topography? (Y/N) Y

5.6.2 Are groundwater flowlines indicated? (Y/N) Y

5.6.3 Are hydraulic gradients included? (Y/N) Y

5.6.4 Are flow velocities included? (Y/N) Y

5.7 Is there any indication of vertical flow in the saturated zone? (Y/N) Y

5.8 Saturated Zone Chemical Properties of Ground Water

5.8.1 Have water quality analyses been performed to establish background data? (Y/N) N

5.8.2 Does background information indicate that the aquifer may be degraded in any way? (Y/N) ____

6.0 Computer Modeling

6.1 Was a computer simulation utilized in the demonstration? (Y/N) N

Check appropriate model:

6.1.1 Mass transport ____

6.1.2 Flow model ____

6.2 Type of model? (check appropriate type)

6.2.1 Numerical ____

6.2.2 Analytic ____

6.2.3 Reference for model? _____

_____

_____

6.2.4 Does the data appear to warrant the use of modeling techniques? (Y/N) ____

If not, explain _____

_____

_____

Attachment G

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF:
5HS-13

JUN 25 1985

CERTIFIED MAIL #P246 373 378
RETURN RECEIPT REQUESTED

RECEIVED
JUN 27 1985
IEPA-DLPC

Lawrence Eastep, Manager
Permit Section, DLPC
Illinois EPA
2200 Churchill Road
Springfield, Illinois 62706

Re: Corrective Action Response Review
U.S. Industrial Chemicals Co.
ILD 005078126

Dear Mr. Eastep:

Enclosed is a copy of information we received from the referenced facility, addressing the "continuing release" provisions of the Hazardous and Solid Waste Amendments of 1984. Please review this information, and complete the enclosed form entitled "RCRA Facility Review for Solid Waste Management Units." We also encourage you to provide us any and all additional information that is pertinent to a consideration of continuing releases at this facility. We will take no final actions concerning this facility without your full participation in the decision-making process.

We ask that you return the completed form, plus any additional information to us (1) within two weeks of your receipt of this letter, for facilities which have indicated "no releases", and (2) within four weeks for facilities which have indicated prior or continuing releases of any kind.

Please feel free to call the previously identified permit writer during the progress of your review with any questions or comments.

Sincerely yours,

for Charles B. Slauter
Edith M. Ardiente, P.E.
Chief, Technical Programs Section

Enclosure(s)

U.S. INDUSTRIAL CHEMICALS CO.

Division of National Distillers and Chemical Corporation • P.O. Box 218, Tuscola, Illinois 61953 • (217) 253-3311

CERTIFIED MAIL RETURN RECEIPT #P 183 356 132
May 31, 1985

Chief, Solid Waste Branch
U.S. Environmental Protection Agency
Region V
RCRA Activities
P.O. Box A3587
Chicago, Illinois 60690

Dear Sir or Madam: ILD005078126 C, TSD, VIC, PA

I am replying to the April 26, 1985, letter of Mr. Karl J. Klepitsch, Jr. and attached questionnaire regarding the applicability of Section 206 of the 1984 RCRA Amendments to solid waste management units located at USI's Tuscola facility.

We have made a thorough review of the information requested by the subject questionnaire and the statutory provision cited by EPA as the basis for its distribution, and we have discussed the matter with our corporate Health, Safety and Environment Department. In order for us to fully evaluate the scope of our obligation to respond to the information request, we feel that the issues set forth below should first be addressed by EPA.

1. Statutory Uncertainty

As is pointed out in the April 26th letter, Section 206 of the Hazardous and Solid Waste Amendments of 1984 (Paragraph 3004 (u) of the Resource Conservation and Recovery Act) provides a statutory mandate regarding corrective action for releases from solid waste management units. Section 206 states in part, "Standards promulgated under this section shall require, and a permit issued after the date of enactment of the Hazardous and Solid Waste Amendments of 1984 by the Administrator or a State shall require, corrective action for all releases of hazardous waste or constituents from any solid waste management unit at a treatment, storage, or disposal facility seeking a permit under this subtitle, regardless of the time at which waste was placed in such unit."

The statute, however, does not offer guidelines as to how the Administrator must accomplish this mandate, nor does it clarify the meaning of several key terms contained in the Law. For instance, it is not entirely clear to us what Congress envisioned as a solid waste management unit. It is not a term that they or the EPA have previously defined. Neither are we certain that the term "constituents" refers to the hazardous constituents listed in Appendix VIII of 40 CFR 261, as EPA has concluded in it's April 26 letter and the accompanying "Certification Regarding Potential

Releases from Solid Waste Management Units". In addition, several terms used in the questionnaire are not used or defined in the statute or the EPA's implementing regulations. Among the undefined terms that would be pertinent to our response are "land farm", "transfer stations", "waste recycling operations", and "waste treatment, detoxification".

For these reasons, we feel very strongly that federal regulations subject to the review procedures required by the Administrative Procedures Act should be developed and promulgated before this statutory provision is fully implemented. Paragraph 3004 (u) supports this view by providing that "Standards promulgated under this section shall require" that corrective action be taken. It is necessary, we believe, that these standards be in force in order for EPA to be able to develop a relevant questionnaire which will permit USI to respond in a way that directly addresses its obligations under the 1984 RCRA Amendments. Therefore, we believe that the distribution and completion of this questionnaire should be postponed until such regulations have been issued.

2. Statutory Authority

We are not convinced that the EPA has the authority to collect the information requested by the questionnaire. Section 3007 (a) of RCRA states in part, "For purposes of developing or assisting in the development of any regulation or enforcing the provisions of this title, any person who generates, stores, treats, transports, disposes of, or otherwise handles or has handled hazardous wastes shall, upon request of... the Environmental Protection Agency... furnish information relating to such wastes..."(emphasis added). This provision gives the EPA authority to collect information regarding the management of hazardous wastes. However, we are not familiar with a similar provision of RCRA that authorizes EPA to request information regarding the management of non-hazardous waste. The lack of any reference to Section 3007 of RCRA in EPA's April 26 letter reinforces our concern that this Section does not grant EPA the requisite information gathering authority. Therefore, we request clarification of this issue before proceeding to prepare and submit any response to the questionnaire.

3. Duplicative Information Requests

We believe that USI already has made available to the EPA and/or its contractor, Ecology and Environment, all information necessary to complete the subject questionnaire, and we feel it to be unduly burdensome to re-submit that information. Our June 8, 1981 CERCLA Section 103 (c) notification, the June 18, 1984 "Superfund" site evaluation by Mr. Ken Krueger and follow-up phone calls by Mr. Steve Wisbaum and others from Ecology and Environment, and a September 23, 1983 RCRA inspection performed by Mr. Bob Stone of your staff, in combination, have made the necessary information available to the Agency. In addition, much of the same information was submitted in

our June 1979 "Eckhardt Waste Disposal Questionnaire" or has been obtained by the Illinois EPA through numerous site inspections.

Responding to questionnaires and other information requests of this nature places a heavy burden on our personnel and resources, and we hesitate to prepare such responses needlessly. If after searching the files available to you, you are unable to collect the information that you need (and assuming our other concerns are resolved), we will be happy to complete the information requirements.

4. Office of Management and Budget (OMB) Form Approval

OMB approval of your form/questionnaire, "Certification Regarding Potential Releases from Solid Waste Management Units" does not appear to have been obtained. The President has recognized that both government and industry have long been over-burdened with "paperwork". Hence, the OMB is required to approve certain government forms, questionnaires, etc. As no OMB approval appears on the form in question here, we assume it has not been obtained. Therefore, in keeping with this philosophy and recognizing that much of the requested information previously has been supplied to EPA or its contractors, or is otherwise available, we would appreciate an explanation as to why OMB approval has not been obtained.

I wish to emphasize that the foregoing is not an attempt to avoid responsibilities shown to be required by the 1984 RCRA Amendments. We simply feel that there are significant legal and administrative questions associated with EPA's information request which should be resolved before we proceed.

Very truly yours,

T. J. Tadler
Plant Manager

TJT/bld

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U.S. INDUSTRIAL CHEMICALS CO.

Division of National Distillers and Chemical Corporation • P.O. Box 218, Tuscola, Illinois 61953 • (217) 253-3311

May 10, 1985

Ms. Lily Herskovits
U. S. Environmental Protection Agency, Region V
230 South Dearborn Street
Chicago, Illinois 60604

RE: Corrective Action Requirements Questionnaire
Karl J. Klepitsch April 26, 1985 Correspondence to
U. S. Industrial Chemicals Company
P.O. Box 218
Tuscola, Illinois 61953
ILD 005078126

Dear Ms. Herskovits:

This is to confirm my May 9, 1985 telephone request to you for additional time to respond to the questionnaire contained in the April 26, 1985 correspondence of Mr. Klepitsch and your acceptance of the May 31, 1985 date by which I indicated our reply would be mailed to USEPA Region V.

Sincerely,

Elmer Alsmeyer

E. C. Alsmeyer
Group Leader

vl

USI

Mr. Alsmeyer called —
5/9/85 Requested 2 week extension, due to absence of facility authorized person. Granted extension. Cleared with Permit Writer until 5/31/85.
(Lily Herskovits)

P 557 098 118

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Thomas Tadler, Plant Manager ~~U.S. Industrial Chmcls. Co.~~	
Street and No. P.O. Box 218	
P.O. State and ZIP Code Tuscola, Illinois 61953	
Postage	$.22
Certified Fee	.75
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	.70
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$1.67
Postmark or Date	APR 26 1985 CHICAGO IL LOOP STA. USPO

PS Form 3800, Feb. 1982 * U.S.G.P.O. 1983-403-517

H. Witschonke: 5HS-12: STU#1: ILD 005078126

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

NB

1. ☑ Show to whom, date and address of delivery.
2. ☐ Restricted Delivery.

3. Article Addressed to:
Thomas Tadler, Plant Manager
U.S. Industrial Chemicals Co.
P.O. Box 218
Tuscola, Illinois 61953

4. Type of Service:	Article Number
☐ Registered ☐ Insured ☑ Certified ☐ COD ☐ Express Mail	P557098118

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Addressee
X

6. Signature — Agent
X

7. Date of Delivery
APR 29 1985

8. Addressee's Address *(ONLY if requested and fee paid)*

PS Form 3811, July 1983 DOMESTIC RETURN RECEIPT

H. Witschonke: 5HS-12: STU#1: ILD 005078126

APR 26 1985

5HS-13

RECEIVED
JUN 27 1985
IEPA-DLPC

CERTIFIED MAIL #P 557 098 118
RETURN RECEIPT REQUESTED

Thomas Tadler, Plant Manager
U.S. Industrial Chemicals Co.
P.O. Box 218
Tuscola, Illinois 61953

RE: Corrective Action Requirements,
Hazardous and Solid Waste
Amendments of 1984
Tuscola, Illinois
ILD 005078126

Dear Mr. Tadler:

As you know, we are currently reviewing Part B of the Resource Conservation and Recovery Act (RCRA) permit application for the above-referenced facility.

On November 8, 1984, the Hazardous and Solid Waste Amendments of 1984 (the Amendments) were enacted to modify RCRA. Under Section 206 (copy enclosed) of the Amendments, all RCRA permits issued after the date of enactment must provide for corrective action for all releases of hazardous waste or constituents from any solid waste management unit, regardless of the time at which waste was placed in the unit. Please note that both hazardous and non-hazardous waste can meet the definition of solid waste under 40 CFR 261.2.

Consequently, we must determine whether such releases have ever occurred at the facility site. If they have, we must ensure that corrective actions either have been taken or will be taken, pursuant to a RCRA permit. An important part of our determination includes your willingess (or unwillingness) to sign the enclosed certification statement. Please read it carefully and either sign it and return it, or return it to us unsigned with a cover letter of explanation, within three weeks of the date of this letter. Any information regarding releases of hazardous waste or hazardous constituents to the environment will be evaluated during the permit review process. Any tentative decision we make concerning your permit application will be public noticed in a newspaper of general circulation in the area of the facility.

Please contact the previously identified permit writer with our Agency for additional information.

Sincerely yours,

Karl J. Klepitsch, Jr.
Chief, Solid Waste Branch

Enclosures

	TYPIST	AUTHOR	STU #1 CHIEF	STU #2 CHIEF	STU #3 CHIEF	TPS CHIEF	WMB CHIEF	WMD DIRECTOR
INITIALS	em		KJK					
DATE	4-25-85		APR 25 1985			4-25-85		

em 4-25-85

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